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MALFORMATIONS

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Nothing in nature furnishes a more interesting field for study than animal cell growth, from fertilization to the completed structure. Our attention is called to the subject by frequent congenital defects and anomalies of development which may destroy life, or, to a varying degree, impair comfort and usefulness.

Certain defects are minor, such as hoarseness, caused by straining the voice, and yet in these cases examination reveals paresis or paralysis of the left abductor or adductor due to overstretching the left recurrent nerve which passes around the arch of the aorta and back to the larynx. Over-tension creates trouble in but 3 per cent of persons. Both recurrent nerves arise at approximately the same level from the vagi. The heart, with its apex forward in early development, becoming enclosed in the chest with its apex downward, passes over the left recurrent nerve. This condition renders adenoma of the thyroid, either in the right or left lobe, a possible cause of increasing the tension on an already impaired nerve.

The theory of a change of the invertebrate stomach and intestines to a wholly new system in the vertebrate is plausible. The cephalic stomach, however, in the invertebrate has become the ventricles of the brain. The infundibulum of man was the primitive pharynx and mouth, and the straight invertebrate gut in which the contents are propelled by cilia has become the central canal of the spinal cord of the vertebrate. The human embryo, in early life, has broken off cilia filling the lower part of the neural canal, which are later absorbed. The essential difference between the vertebrate and invertebrate is that in the vertebrate the intestinal tract is in front of the nervous system, and in the invertebrate, behind the nervous system. The cerebrospinal fluid is formed in the choroid plexus, and the limited digestion of the higher invertebrates, many of which are blood suckers, is carried on by digestive cell secretion from what is now the ependyma and the choroid plexus in the ventricles of the brain in man, and it is claimed that there are occasionally found in this tissue cells which resemble liver and pancreatic cells. With proper stimulus this might account for a possible increase in the cerebrospinal fluid, greater than that normally made and absorbed.

In spina bifida leaking fluids often create the irritative changes in the skin resembling those caused by the fistulous drainage from the pancreas. Spina bifida occurs but rarely in the upper part of the cord, being more common in the lumbar region because of later closure of the bone. Such tension distends the membrane and prevents the union of the posterior laminae, and the sac fusing with the skin is left projecting. In many instances spina bifida occurs after the bony covering is complete, or nearly so, and may cause absorption anteriorly, posteriorly, or extend as a cord membrane, with fluid lower than normal, into the sacral canal. The occult variety of spina bifida, if anterior, or even if posterior, in many cases, may only be seen with the X-ray. Small ones may spread out and produce little or no elevation of the skin, but a thickening of the skin over them with an unusual hairy area, as seen in adults. Large hairy plaques of the skin of the limbs or lower part of the body should have a spinal X-ray test for the occult varieties of spina bifida.

Spina bifida may involve the nerves to one or both feet, and club foot may be associated. Should the terminal filament become detached from the coccyx at the same period of development, either a single club foot or double club feet would result. Should such conditions occur, or should spina bifida occulta produce the same tension on certain nerves, the result would be congenital failure of developmnet of the bladder and rectum at the cloacal stage, exstrophy of the bladder, imperforate anus, with attachment of rectum to vagina, or posterior urethra or bladder. Rapidly growing spina bifida may sometimes be accompanied by acephalia, or, in a few cases, by hydrocephalus. Successful removal of spina bifida is sometimes followed by hydrocephalus. The agent producing such an overstimulus in this early developmental period is possibly a variation in the salts in the amniotic fluid. It is noted that there is usually an excess of amniotic fluid in monstrosities, and in experimenting with frogs' eggs it is found that if they are developed in a 0.6 per cent of a 1 per cent salt solution, a high percentage of spina bifida and ventricular deformities result; 0.7 per cent of a 1 per cent solution gives a still higher percentage. The sea salmon undoubtedly seek fresh water in which to spawn in order to preserve their young.

In the human embryo at an early stage of development the size of the neural tube and the developing colon are the same. For a brief transitional period there is a connection between the lower neural canal and the developing hind gut. The lower limbs budd off from the lower part of the body at an early date, when the growth of the spine is one-third faster than that of the spinal cord. A terminal filament attaches the neural canal and the fused cord membranes and dura to the region of the coccyx, and this removes all strain from the nerves which supply the lower part of the body, the bladder and rectum, and the lower limbs during this period of active growth of the spine. All of these nerves, as they leave the cord, pass downward and then out of the bony foramina. If, in an early stage, the terminal filament should pull loose while the spine was making its rapid growth, there might be increased tension on certain of the nerves passing through the bony exits in the spinal column. It is possible that club feet are formed in this way, and defects in the development of the proctodeum uniting with the rectum, also changes of the cloaca, causing various types of exstrophy of the bladder and imperforate anus. This nerve tension may also be brought about by the occult variety of spina bifida now so often found by means of the X-ray. The attachment of the dilated neural canal with a few nerves fused to the dura and dragged downward by the more rapidly growing spinal column, causing increased tension on such nerves, might result in various malformations of the feet, one or both, or of the developing bladder and rectum. With enough nerves still viable to afford bladder control, others could effect the changes noted in the so-called *cord bladder*, such as occurs in disease of the spinal cord, and is often unexplainable in patients without. Club foot is occasionally found with spina bifida and also occasionally with exstrophy of the bladder. At the point of attachment of the terminal neural filament a very common anomaly is a dimpling of the skin where the anus of an invertebrate would have been. Vestigial remnants of embryonic nerve tissue are found around the sacrum and the coccyx, and not infrequently dermoids and sinuses, all of which have their origin in defects in the terminal filament and attached embryonic nerve tissue, or dermal tissue tracted inward and buried.

It is apparent that anomalies of the human body are normal conditions in certain lower types of life, or the mechanical effects of delay, or difficulties in transition of tissues with a shorter heredity. What other condition could produce exstrophy of the bladder? The work of Brehmer shows that certain placenta have imperfectly developed glomeruli, thin plates of epithelium covering tufts of capillaries which serve for a time as the urinary delivery of the fetus to the mother. The wolffian body (mesonephros) is an excretory structure, and delivers to the wolffian duct and into the allantois in the early period when it is part of the cloaca. The allantois forms the bladder, the upper part of which connects with the umbilicus by the urachus. In the latter cysts may rarely be found, should it, in oblitera-

tion, contract first next to the wall of the bladder. In the transition from the mesonephros to the permanent kidney there is an intermediate period in which the placenta of the mother performs the function of the kidney. This occurs in man, rabbits and guinea pigs, but never in sheep, pigs or cats. In rats the placenta furnishes the entire urinary secretion until birth. Possibly failure of the human placenta to function, thus forcing on the developing bladder excretion greater than its capacity, at the time when the union of the pubic bones should occur, prevents that union, and later splits the entire collecting surface from the umbilicus to the end of the urethra. In one-fourth of the cases of exstrophy of the bladder skin is seen between the normal umbilicus and the exposed wall of the bladder. In three-fourths of the cases the umbilicus is at the upper border of the exposed bladder, but does not exist as an umbilicus if the child lives.

While some of the possible causes of the few defects considered in this discussion have been presented many times from many different viewpoints, others are new suggestions. However, my opportunity to see so many patients with exstrophy of the bladder (eighty-nine) and many allied defects of bladder and intestines, as well as a great number with spina bifida, has strongly fixed in my mind the belief that the defects of the nervous system are first, and those of the bladder and intestines second in importance, and that both may be associated with or without defects of development of the feet. I am directing attention to the subject so that those who have opportunity to study such cases, and to secure specimens, will do their utmost to see that these specimens reach some true scientific observers, or anatomists connected with the medical schools of universities, in order that all may profit, and ultimately facts will replace beliefs and hypotheses. Obviously much more can be derived from an examination of fetuses than from an examination of adolescents or adults when tissues that were present in early life have disappeared through atrophy. It is very evident that in the transition from vertebrate to invertebrate is to be found the cause of many of the anomalies of development.

I have in the hospital at present the following illustrative cases: Case 1. A man, aged thirty-two years, with exstrophy of the bladder, non-union of the public bones, complete epispadias, and no umbilicus. Case 2. A girl, aged four and one-half years, with exstrophy of the bladder, non-union of the pubic bones, and a slightly clubbed left foot, a later defect. The umbilicus in this case was in the normal position, and there was an area of the skin between it and the border of the exstrophy. In both of these cases the ureters were transplanted into the upper rectum, and the left sigmoid and the bladder were removed. Case 3. A boy, aged fifteen years, in whom tension on the bladder had not appeared until the pubic bones were united. Epispadias was present. There were no sphincters, and there was constant soiling from leaking urine. The ureters were transplanted to the rectum and sigmoid; the bladder was not disturbed. Case 4. A baby boy, with imperforate anus, on whom it was necessary to perform colostomy a few days after birth. The lower end of the rectum was connected by a small opening with the membranous urethra. The left foot was clubbed.

METHOD OF EXAMINING THE NEPHRITIC PATIENT.

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There is a distinct tendency today in medicine to replace old, tried, simple methods by new, rather complicated methods and laboratory tests. This is unfortunate for two reasons: Often the new give no more information than the old; the physician loses his skill with the old and so cannot apply them to greatest advantage when conditions arise which reduce his possible methods to the simplest types. Methods and tests too complex to be carried out by the physician himself always are at a disadvantage when it comes to interpretation of the results in relation to the patient, especially because the physician who does not know how to do the test fails to appreciate its limitations, and the doer of the test, knowing nothing of the patient, is equally handicapped. This is not to say that these newer, more complicated methods are of little value. Many are of very great value in their

proper relationship to individual patient and other methods. Their use requires intelligence both in application and interpretation. When this is lacking perhaps the patients profit most in their omission. I believe that for the majority of patients perfectly adequate study can be made with relatively simple methods. As an example of this I will run over what seems to me to be the best methods for the examination of nephritic patients.

History and Physical Examination.

A careful, complete history and thorough general physical examination should be the first step in the study of every nephritic. Study of the heart and blood vessels is particularly important. The size and rhythm of the heart should be determined. X-ray examination of the heart usually is not needed, for simple methods tell us quite accurately its size. If X-ray examination is made the tube should be at least six feet from the plate to give parallel rays so as to prevent distortion. Rhythm usually can be analyzed satisfactorily without electrocardiogram if the examiner understands cardiac arrhythmias. The electrocardiograph, of course, gives more accurate information, but practically it can usually be dispensed with to no detriment to the interests of the patient. The same applies to the polygraph. Certainly the patient of moderate means should not be urged to pay for either X-ray or electrocardiographic study.

Much can be learned from the study of the pulse. It is most unfortunate that the clinician of today so often has lost the keen touch of the older generation who had to depend on their simple senses and common sense for so much of their information about their patients. I have been interested to find that at times I can detect a pulsus alternans which tries the patience and technical skill of my assistants to demonstrate with any type of polygraph. The pulse must be studied to determine changes in vessel wall, variations in pulse wave and the characteristics of the rhythm. As stated above, most arrhythmias can be accurately diagnosed with stethoscope and palpating finger. A manometer is needed to record blood pressure; both systolic and diastolic pressure should be recorded. The manometer often will detect a pulsus alternans missed by finger and polygraphic tracing. In fact, to recognize pulsus alternans feeling the pulse, use of the manometer and a polygraphic tracing are often needed, for sometimes the one or the other gives the evidence. In using the manometer the auscultatory method is best for pressure determinations; it is well to remember that at times silent zones occur below the actual systolic pressure, and so the true pressure will be missed unless the pressure is pumped up high and observations made of the level of pressure of the first appearing sounds with both a rising and a falling pressure. Such silent zones probably arise from temporary spasm of the wall of the artery.

Ophthalmoscopic examination should be a regular part of the routine physical examination of the patient. Much of the greatest value in diagnosis and prognosis is thus learned. The modern electric ophthalmoscope is so simple that all practitioners should use it. Periodic weighing of patients is important. It gives the best index of variations in edema. It is an indication of the adequacy or inadequacy of the diet. A progressively falling weight when the patient is given a diet of sufficient calories is a sure sign that the disease is progressing unsatisfactorily.

Hemoglobin estimations and red cell counts are other methods of following progression of nephritis, as a progressive anemia is a definite sign of a downward course in the patient's illness.

Urine Anaylsis.

Much is to be learned from study of albumin content and the casts and cells in the sediment. There is a very unfortunate tendency to neglect this, especially the latter, and to do it carelessly. Sediments must be studied in freshly passed specimens, for they often disintegrate quickly, particularly in alkaline urines. The very general custom of having urine sediments examined by technicians probably is the cause for the very general neglect of the valuable information to be obtained from such study. If physicians would study the urinary sediments of their patients for themselves instead of having technicians do it, they would know vastly more about what is going on. No description given you can possibly replace personal observation of casts and cells in the urine. The cast and cell picture gives us our most accurate

knowledge of the degree of activity of renal disease.

Glucose should be tested for and the specific gravity taken. The twenty-four-hour amount of urine of patients under study should be measured and recorded. The value of this information is greatly enhanced when similar observation of fluid intake is made. The important thing to know is whether there is a normal balance between fluid intake and urine output. The output of urine should be about two-thirds to three-fourths of the fluid intake. This varies with temperature, for in hot weather much more water leaves the body as sweat.

Except for albumin, glucose, casts and cells, specific gravity and amount, little else can be learned from the study of the urine. Other observations on urine, so often reported from laboratories, are of no real help in studying the nephritic and represent an unintelligent waste of money and energy.

Tests of Renal Function.

Three tests are worth while carrying out. The others may be of use in investigation but add no knowledge of practical value for the nephritic. Of course this statement only holds true of present knowledge; better tests may supplant these three later. One of these tests is of use only with slighter degrees of nephritis; with more advanced stages only two are needed. The three tests are (1) the two-hour or concentration test, often, though incorrectly, called the Mosenthal test; Mosenthal merely modified the diet to suit Americans; (2) the phenolsulphonephthalein test, and (3) the determination of the total non-protein nitrogen or of the urea nitrogen of the blood. Only one of these determinations is needed.

The following is the best way of procedure: If it is not evident that the patient has very mild nephritis, the phenolsulphonephthalein test should be done, and before breakfast in the morning blood be taken from an arm vein for chemical analysis. Urea determination on the whole is easiest as to technique and yields perhaps a little more information than total non-protein nitrogen. However, either is satisfactory. If the values for 'phthalein excretion and blood nitrogen are about normal, the two-hour, or concentration test, should be done. This may be done at the outset in the obviously mild nephritis.

A single test of renal function may be misleading. By repetition one learns much more, for it is the trend of renal function over a period of time that is important in the nephritic case. Repetition, too, eliminates the errors of faulty technique.

With the 'phthalein test failure to empty the bladder, either because of prostatic enlargement or nervousness, is the most frequent source of error. This easily can be checked by catheterization. When there is a considerable discrepancy between blood nitrogen and 'phthalein excretion values this should be done or, at least, the test be repeated. Blood nitrogen values are influenced by diet. This needs to be kept in mind in interpreting results. Also this fact enhances the value of the results as a guide to proper protein intake in the diet and an index of progress in the patient.

The two-hour test requires nothing more than a three-meal diet with the largest proportion of the protein and salt in one meal. Specimens at two-hour intervals during a twelve-hour day are collected and measured. Separate specimens are not needed at night, only the total night amount. Specific gravity is recorded for each two-hour day specimen and for the night amount. No test could be simpler.

The 'phthalein test in simplest form can be carried out by any physicians on office or house patients. Blood nitrogen determinations require skilled laboratory technique. Fortunately very much can be learned without using the latter, especially when all of the other methods spoken of above are carefully carried out.

Except for the blood nitrogen determinations there is nothing needed in a thorough study of the nephritic patient beyond what any physician can readily learn to do; in fact, should know how to do, and should be expected to do. These methods are relatively simple and not time-consuming if intelligently planned. They yield, when completed, knowledge indispensable for a proper handling of nephritic cases. The only complex one, blood nitrogen determinations, can be dispensed with without any great loss to the patient. I should prefer to see its omission rather than imperfect carry-

ing out of the other simpler measures as is so often seen.

What I have said of the nephritic patient applies to other groups. Simple methods of study are the most valuable ones we have. Undue multiplication of tests tend to obscure the picture, especially when the interpreter of results is none too familiar with the tests or the patient. It is better for the practicing physician to adhere to methods thoroughly tried out. The trial out of new methods rightly belongs to the teaching and investigating clinics, and they need to be more cautious than at present in putting their stamp of approval on the new. By all means be sure not to make your patient pay for some examination of only problematic value to him.

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THE STORY OF THE X-RAY.*

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Tracing the science of medicine from its earliest recorded period, there has appeared as a seemingly vital part of it some mysticism and a great deal of romance. The drugs were prepared at certain phases of the moon with weird lights and solemn incantations. A man of medicine was marked as one who possessed supernatural power and was set apart from his brethern as one of a higher order.

What would the ancients have thought if they could have returned to our planet in 1895 (not thirty years ago), when the X-Ray was presented to the world?

To actually have an apparatus that had the power to penetrate objects opaque to ordinary light was not even a vision with our most distinguished scientists a few years prior to this epochal discovery.

And the fact of its practicability constitutes the greatest wonder that medicine has produced. The operation of the machine itself is almost uncanny. It is as if a fairy dwelt within the confines of the transformer ready to do the bidding of the doctor.

From the first day that this fairy located the key within the closed book, the demands of the doctor have become more and more varied.

The location of foreign metallic bodies and the diagnosis of fractures has become a most ordinary procedure. The examination of the gastro-intestinal tract by means of the opaque meal is now a routine measure. Every specialty has need of the X-Ray and there is no physician who would care to practice medicine without the aid and assistance of the X-Ray's penetrating eye.

In an address recently delivered Dr. William J. Mayo paints a vivid picture of what would happen if a surgeon became blind. He then refers to the X-ray as the eye of the surgeon, and adds that when the X-Ray is discarded the surgeon is as blind as if he had lost his eye-sight.

During the war with Germany the X-Ray proved its worth time after time. The rapidity of its work among the wounded, the facility and ease with which the wounded soldiers were rayed and diagnoses made were astonishing.

The Germans shipped from America quantities of contraband articles hidden in bales of goods, and after America declared war infernal machines were likewise hidden, timed to explode in mid-ocean. Again the X-Ray proved its worth, and instantly located the articles without the necessity of further search.

Even the battle planes were made safer from accident by the examination of the plane with the X-Ray to discover imperfections in the materials used.

In one of the late novels—Black Oxen—the authoress makes of her heroine a woman who has been rejuvenated by the Steinach method, which is an X-Ray treatment, utilizing the stimulating effects of the X-Ray. The story is rather far-fetched and yet Holzknecht of Vienna reports of some of the cases treated in collaboration with Steinach that "The lassitude had disappeared and full physical and mental vigor had been restored; a decidedly more youthful appearance had been noticed, as evidenced in the better circulation and greater firmness of the skin."

But are we any nearer the fountain of youth with the X-Ray than Ponce de Leon was? Conservative thinkers reply in the negative.

It is admitted, however, that in treatment the X-Ray has shown a most wonderful growth. From the treatment of

*Presidential address delivered before the Louisiana State Medical Society, Opelousas, La., April 22-24, 1924.

facial blemishes it has progressed through the treatment of diseased tonsils, until now, thanks to our German friends, the X-Ray with its Deep Therapy has entered the lists to war on cancer.

Before the war the Germans had done some work in Deep Therapy, but it was not until 1920 that news reached us that they were using with good results a machine with a penetration of twenty inches. Immediately the American manufacturers investigated the German apparatus, with the result that the best Deep Therapy machines now on the market are of American design. This was made possible by the efforts of Coolidge, an American physicist, who perfected a tube that was capable of carrying this enormous voltage.

He has now made a greater stride by reducing the time of treatment. For deep seated conditions the time necessary for treatment was obvioustly quite long, but with the new water-cooled Coolidge tube with the capacity for increased milliamperage the time factor is lowered.

Coolidge as well as many other investigators in this field are indebted to Wilhelm Conrad Roentgen, whose discovery made these wonders possible, and whom medicine has honored by naming for him the rays to which he applied the algebraic symbol X.

Roentgen the only child of wealthy parents was born in Lennep, Prussia, in 1845; while most of his life was spent in Germany his early scientific education was received at an engineering school at Apeldoorn in Holland. At the age of twenty he was graduated from the university in Zuerich, Switzerland, with the degree of Doctor of Philosophy. With Prof. Kundt he went to Wuerzburg, a place he was later to make famous by his discovery of the X-Ray. An assistant professorship in physics in Strassburg was his next position, and at the age of thirty he began teaching mathematics and physics at the Agricultural Academy in Helenheim. Later he returned to Strassburg and as Prof. Kundt's associate he taught theoretical physics.

For nine years or until he was forty-three years of age Roentgen was professor and director of the institute of physics at Geissen, leaving this position to accept the directorship of the department of physics at the University of Wuerzburg, and while there in 1895 discovered the X-Ray or Roentgen Ray as it is now called.

But the entire credit should not be given to Roentgen alone, for there are others, whose discoveries were important steps making the ultimate goal possible. And to these scientists should we accord their just share in this honor high enough to include all contributors.

Particularly should we honor Crookes, an Englishman, for his tube, and without doubt Crookes was really the first to produce X-rays.

In the discovery of the X-Ray we can almost imagine that the stage was set for the act, each scientist entering and acting his part, making his discovery a part of the drama, leading to the climax of the play or the final discovery.

First to enter on the stage is Otto Von Guericke with the air pump to produce a vacuum, this in the year 1650; then came a high tension electric current to send through this vacuum. For the production of the high tension current we are indebted to Faraday in 1838. Twenty-one years later Geissler studied the effect of passing a high tension current through a vacuum tube, but failed to produce the X-Ray because the degree of vacuum necessary was lacking. This deficiency was supplied by Herman Sprengel in 1865, who invented the mercury air pump, permitting high rarefaction with more rapidity.

Then upon the scene came England's son, Sir William Crookes, who in 1875 exhausted tubes to the required degree of vacuum and without a shadow of a doubt produced the X-Ray.

This was the cue, to continue the phrases of the stage, for Roentgen of Wuerzburg to enter with a coil, a small cylindrical-shaped tube, and a screen consisting of a piece of card-board with some crystals of barium platino-cyanide deposited on it.

He actuated the Crookes tube, when to his amazement the crystals on the cardboard, which had been placed on a table some distance away, fluoresced. Again he actuated the tube making doubly sure that all light was excluded and again the fluorescence appeared.

"What did you think when you observed this phenomenon?" was asked of

Roentgen. "I did not think" replied the discoverer "I investigated."

Like the frontiersman who blazed the path with his ax, so did Roentgen in his investigation open the way for added exploration, until now the Roentgen Ray has become so much a part of our lives that even the children are familiar with some of its wonders.

Since 1895 the X-Ray has passed through many cycles beginning with an extreme optimism when everything was expected of it and nothing seemed impossible. Then the pendulum swings back equally as far to the stage of pessimism, when it was found to have limitations, and the X-Ray considered without value on account of these limitations. Now the pendulum is stationary at the stage of conservatism. The minor limitations are recognized and discounted, for the impossibilities of the past have become the routine work of the present, and who among us has the prophetic vision to forecast the future wonders of the X-Ray.

When Roentgen died in 1923 thousands of physicians in all parts of the world were enrolled under his banner as Roentgenologists engaged in the work founded by this scientific genius.

To these men engaged in this hazardous branch of medicine I am paraphrasing the words of Guy de Chauliac who in the 14th century addressed the following to the surgeons of France:

"Let the roentgenologist be bold in all sure things and fearful in all dangerous things; let him avoid all faulty treatment and practices. He ought to be gracious to the sick, considerate to his associates, cautious in his prognostications. Let him be modest, dignified, gentle, pitiful and merciful; not covetous nor an extortionist of money. But rather let his reward be according to his word, to the means of his patient, to the quality of the issue and to his own dignity."

THE PROPER EVALUATION OF LOCAL ANESTHESIA.*

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Local anesthesia has a large and helpful place in surgery and its use is to be encouraged, but in spite of this there are certain factors which make a more detailed analysis of its status necessary at this time. In the beginning, let me apologize for seeming in any way to detract from this most valuable surgical adjunct, and let me say that my purpose is merely to weigh some of the evidence, and to urge its use only in properly selected cases.

Fixed ideas and dogmatic statements are not conducive to medical progress. The physician with the single-track medical or surgical brain will soon collide with some obstacle. I can illustrate this in no better way than by recalling to your minds that there was a time when the surgeons in this section were considered extremists in the use of chloroform as a general anesthetic. We were almost the last to abandon the universal use of this drug, in spite of the fact that all the commissions which had investigated the comparative statistics gave a much lower mortality to ether. It took several deaths in quick succession to make us see the light. I may say in justification of this stand, however, that I have been informed by naval surgeons working in the tropics that they get a better anesthesia in those hot climates with chloroform. This may be due to the low boiling point and too rapid volatilization of ether; indeed, in one institution in New Orleans, during very hot weather, the ether to be used on a given day is "frapped" by being kept in a tub of cracked ice to reduce its boiling point temporarily.

While the general anesthetic in use at the present time, such as ether, nitrous oxid and ethylene, have a definite mortality, Hare pointed out long ago that this is very low, and that the risk is scarcely greater than is incurred in the pursuit of one's daily routine. People do not hesitate to take an ocean voyage for pleasure, yet the incidental risk is rather greater than that of being put to sleep by a competent anesthetist. I dare say that the increased number of automobiles in our urban communities jeopardize life much more than does a well-administered general anesthetic. Now a favorite argument of the advocates of local anesthesia is that there is no direct mortality dependent on its use. This may be true, but there is an attend-

*Read before the Seventh District Medical Society, Crowley, La., March 6, 1924.

ant morbidity and mortality which certainly must be considered. In my own experience local and general anesthesia divide the honors as far as mortality is concerned. I have lost one goitre patient on the table under ether from the collapse of a sabre trachea, and one nephritic died after a very satisfactory operation for hernia under local anesthesia. Both patients were in good condition, and in both instances the anesthetic seemed to be the factor which precipitated the unfortunate termination.

Before considering the disadvantages of local anesthesia, let us review in a general way some of the more important indications for its use. Certainly one of our fundamental present-day difficulties is the securing of trained anesthetists in any but large surgical clinics where sufficient salary can be offered to make this specialty attractive. As a rule, in most of our institutions we are compelled to depend upon an ever-shifting class of internes who are not interested in this branch of surgery, as they do not intend to follow it. The long induction period with the patient held down by several attendants, the discomfort of the surgeon who operates on a struggling patient, and the consequent stormy post-operative course have compelled us in many instances to resort to local anesthesia. For this reason, if no other, it is well for the general surgeon to acquaint himself with the technique of local anesthesia, which will not only add to his usefulness, but will be an incentive for him to keep himself informed in anatomy, for it has been well said that for a man to be proficient in local and regional anesthesia he must be a competent anatomist.

It is all the more imperative to be familiar with all phases of local anesthesia as it does not seem likely that the supply of general anesthetists is likely to increase at any time in the near future. Let me say parenthetically that this is an important reason why legislatures should be discouraged from passing laws limiting the administration of general anesthetics to registered physicians. We all know many nurses who are fully competent to look after this procedure. Whenever I am asked to favor such an act, I always answer by assuring the professional anesthetist that I shall be glad to play the game his way as soon as he can keep me supplied with men of specialized training who will not gouge my patients with exorbitant fees, who will furnish a routine brand of service, and who will devote their time and energy to the patient's anaesthesia and not to my operation. This usually puts a quietus on the argument.

The use of local anesthesia makes one a profound student of temperament as well as a good anatomist and physiologist, and the recent demonstration of Professor Hans Finsterer of Vienna would seem to lead to the conclusion that its possibilities are unlimited. To see this master of surgical technique demonstrate his splanchic and mesenteric anesthesia and resect two-thirds of a patient's stomach seems more than dramatic. The wonderful work of Braun, followed by Crile, Cushing, Bloodgood, Allen, Hertzler, Labat and Farr, makes us realize the far-reaching possibilities of the regional and neuroregional methods, the latter exemplified in the work of Kulenkampff, Kappis, Schlosser and Hartel, to say nothing of our own great pioneer, Dr. Rudolph Matas. But in spite of this, there are other factors to be taken into consideration, age, sex, race and temperamental characteristics. Except for the brilliant results of Bevan, Lewis and Downes in operating on infants with congenital pyloric stenosis by the Fredat-Ramstedt technique it is questionable whether satisfactory work can be done under local anesthesia on any but starved and many times moribund infants. Certainly women are poorer patients than men, and such temperamental races as the Italians and French make undesirable subjects. Also, I still hold the view which I advanced before a society meeting some years ago, that local anesthesia should usually be the method of choice in old people, in all operations for strangulated or incarcerated hernia, and in physicians, for this last group of patients always has a dread of losing consciousness.

In so far as actual operations are concerned, it is usually agreed that in those surgical procedures where anatomical lines can be followed, such as hernioplasties, removal of tumors and dissec-

tion of nerves and blood vessels, regional and neuro-regional methods of anesthesia have their greatest field of usefulness. It is doubtful whether we should employ either of these methods where there is danger of diffusing cells from malignant disease, or bacteria from infected foci. During the World War we learned very early that debridement could not be done with the same high percentage of primary union when a local anesthesia was used in preference to ether narcosis. The toxic thyroid is another contra-indication unless some other form of anesthesia is used, such as nitrous oxid, to "take the patient out of the operating room." This may seem to be a paradoxical statement in the face of the brilliant work of Crile, but I have always felt that the greater part of Crile's anoci-association was Crile himself, who is certainly a master technician and in whose hands even less drugging than his present method demands would be necessary to obtain his brilliant results. Again, a sub-total gastrectomy in Finsterer's hands seems easy, but I doubt whether many of us could do so well.

Most of the deliberate operations on individual abdominal organs can be successfully performed under local, including the appendix, the gall-bladder, the organs of the female pelvis, and the kidneys, but we must remember that in at least 35 per cent of patients with intra-abdominal disease there is more than one condition present, and a certain amount of exploration is always indicated. Opening and closing the abdomen is simple enough, injection of the mesentery of any single organ will control local pain, but an attempt to work belond a limited area is always accompanied by a sickening feeling referred to the epigastrium, and almost invariably followed by vomiting, and partial or complete evisceration with its usual serious consequences, often necessitating a general anesthesia to replace the extruded organs. The early work of Matas in the resection of both superior maxillae in one patient after blocking the second division of the trifacial was a brilliant achievement which antedated the subsequent work of Hartel, Schlosser and others who used the same or a similar technique in their respective procedures for alcoholization of the branches of the trifacial in tic douloureux. The injection of large nerve trunks, either without or with exposure, is helpful in many operations, but as I have already pointed out, it is much more useful when we follow anatomical lines. It is for this reason that the repair of hernias lends itself especially to the use of local anesthesia by the regional or neuro-regional method, and again for this reason I have chosen to make an analysis of a series of operations for the cure of this condition to show that we should be elective in the choice of our anaesthetic agent.

In operations for the cure of hernia the avoidance of recurrence must be our prime consideration, and it is an admitted fact that the incidence of recurrence is in almost direct proportion to the number of deep infections following the operation. There are other factors, of course, but the greatest number of recurrences follow infection. The figures collected for me by Dr. A. B. Pitkin from the record room of Touro Infirmary show that suppuration is just three times as frequent after local anesthesia as after general, and this in spite of the fact that operators are usually more careful in handling tissues when patients are awake. This is fairly conclusive evidence that the use of local anesthesia does reduce local resistance to infection. The fault does not lie in any one agent. Some years ago I began observing the local effect of such drugs as cocain, novocain, tropocain, etc., in respect to local inflammatory reactions, and I could see no material difference. One manufacturer added a chemical antiseptic to his product, and this seemed to cause more local redness. The local reaction of tissues to the double salt of quinine and urea has led to its use being abandoned by nearly everyone. Adrenalin is a necessary addition to all solutions which are used, and the temporary anaemia and reactionary hyperaemia may be the cause of some of our bad results. It is useless to remind you that small blood accumulations separate the tissues, thereby preventing close union, and at the same time act as pabulum for any micro-organisms that may be carried in by the many needle punctures or the skin incision. While the deep anesthesia can be secured by the method of Cushing and Bloodgood, cre-

ating an oedema of the analgesic solution around the ilio-inguinal and ilio-hypogastric nerves, the skin of the area must be anesthetized by local infiltration, and it is this procedure which is fraught with danger. In working with this neuro-regional method, now advocated with slight modification by Labat and others, I attempted to minimize the amount of solution, thinking that the odematization might be the cause of lowered resistance, and I found that an average of one ounce of a ½ per cent solution of novocain was sufficient for most cases, but this did not seem to influence the results materially. It is probably no single factor, but a combination, which gives us three times as many infected patients when local anesthesia is used.

The figures cover a period of eighteen months, ending October 24, 1922. The operations were performed by some fifteen surgeons, hence bad results cannot be charged to the carelessness of any one operator. There were 457 operations tabulated, with 222 under local and 235 under general anesthesia. Fourteen were femoral hernioplasties, six under local and eight under general, and in this group there were no infections, just why I cannot say. The other operations were all inguinal hernioplasties. In the whole group there were 56 infections following local anesthesia (usually ½ per cent novocain with 4 m. adrenalin to the ounce), and 20 infections when gas, ethylene or ether was used, that is 25.2 per cent for local as against 8.4 per cent for general anesthesia. The Bassini or Ferguson-Andrews operation with only slight modifications, was done throughout the series.

In conclusion, let me emphasize again that age, sex and race must be considered, as well as anatomy and pathology, in the selection of an anesthesia for a given patient. Then, when local anesthesia has been selected, we must be prepared for infection three times as often as when general narcosis is employed. Careful technique may reduce this figure somewhat, but we must not lose sight of the fact that we cannot expect the same immunity from local inflammation when we have so many factors predisposing to suppuration in the use of local anesthetics.

LUMINOL OF SODA IN THE TREATMENT OF HYPEREMESIS GRAVIDARUM.

HILLIARD E. MILLER, M.D., F.A.C.S.,
NEW ORLEANS.

The high hospital mortality which is reported for the severer types of hyperemesis gravidarum, variously estimated at from 10 to 20 per cent, is easily explained on the ground that a large number of the cases are admitted in an extreme degree of starvation and highly toxic, while others are actually moribund, so that no form of treatment, including the induction of abortion, can be expected to avail. On the other hand, the condition is a serious one, even under the most favorable conditions in private practice, and because as yet no theory has been advanced to cover all its phases, the treatment remains largely empirical and correspondingly unsatisfactory.

As yet no specific toxin has been isolated as the causative agent, but it is generally accepted that the liver is unquestionably the organ which is primarily involved, though just what brings about the dysfunction has not been satisfactorily explained. The best explanation yet offered is that in some manner it becomes incapable of storing glycogen and because of this inability is also incapable of detoxifying substances from the intestinal tract. Logically, therefore, the administration of glucose should rectify this condition, but that it does not is proved by the fact that practically all that is injected is eliminated through the kidneys very shortly after its entrance into the blood stream.

Possibly the glands of internal secretion, acting directly through the sympathetic nervous system, are partially responsible, but we cannot say definitely that any particular gland or group of glands plays a specific part. In our hands the administration of various glandular extracts, particularly corpus luteum, as advocated by Dr. B. C. Hirst, has proved very disappointing, and I am strongly inclined to believe that any

cases which improved under this treatment would have improved in the same degree under any other form of suggestive treatment.

For a long time it was believed that Williams' theory of the rise in the ammonia coefficient, while it did not explain the causes, would at least aid us in the differentiation between the toxic and neurotic types, but it is now generally believed, and Williams himself takes this view, that this rise is the sequel of starvation, and therefore is of no value in diagnosis. Recent investigations of the liver function in the phenoltetrachlorothalein test seem to indicate that we may expect considerable assistance from it in determining the degree of liver involvement and the toxicity of the causative agent, as well as in diferentiating the types.

Kidney involvement is apparent only at the last, and is usually manifested by a slight trace of albumin and occasional casts, proving that whatever pathology does occur is in the convoluted tubules. Acetone is of common occurrence, but merely indicates a condition of acidosis, the result of starvation and dehydration. Experiments on the carbon dioxide combining power of the blood have been uniformly negative.

Undoubtedly the larger group of these cases is neurotic rather than toxic in origin, but the differentiation as yet is obscure, and even the neurotic group does not respond readily to treatment in all instances. Personally, I am firmly convinced that in the early stages both morning sickness and pernicious vomiting are the result of pylorospasm, though whether as a reflex from the pregnant uterus or from the glands of internal secretion I am not prepared to say. Moreover, the mortality is always directly in proportion to the duration of the symptoms. Therefore, every case of the so-called morning sickness of pregnancy should be regarded as a potential case of hyperemesis gravidarum, and should be treated accordingly. The institution of simple measures, such as the regulation of diet, frequent small meals, the correction of constipation, exercise, and the administration of small doses of sedatives will cure a very large proportion of the early cases. Too many patients, however, regard this condition as an integral part of their pregnancy, and delay consulting their physician concerning it. They should not be alarmed unduly, but they should certainly be informed that this is not the case, and warned that it may develop into something very much more serious if it is not checked.

I have been led to consider this subject again for two reasons: In the course of another investigation I happened to have my attention called to the results in the treatment of this condition in one of the Charity Hospital wards, and was reminded anew of how serious a complication of pregnancy it may become; and I desire to record the very successful results I have had from the use of luminol of soda (phenolbarbital sodium) as advocated by Dr. Ralph Luikart in the April, 1923, issue of the *American Journal of Obstetrics and Gynecology.*

During the period from 1920 through 1923 38 white women were admitted to ward 65 at Charity Hospital with a diagnosis, afterwards confirmed, of the vomiting of pregnancy. The ages ranged from 15 to 42. Fifty per cent were primiparae, but one patient was pregnant for the thirteenth time. The stage of gestation ranged from 6 weeks in 3 patients to 7 months in one, following dengue fever; 55.3 per cent were pregnant about 3 months. Eight patients had had the same condition in previous pregnancies, and in one case it had occurred 3 times; that is, over 21 per cent of the multiparae, who formed 50 per cent of the series, had experienced this trouble more than once. The duration varied from 1 week in 3 patients to 3 months in one. With the majority it had lasted about 2 months. Eighty-two per cent had temperature above normal, the great majority being below 102. Twenty-four patients, 63.3 per cent, showed a pulse rate over 100, and in 16 of these cases it was over 130. Thirty-nine per cent showed changes in the urine, including albumin, casts, acetone, indican and diacetic acid. The highest blood pressure was 135-85, the lowest 84-60. In 4 cases the hemoglobin ranged from 50 to 30 per cent. Six patients had positive Wassermans, and one had a gonorrheal infection. Eight were markedly emaciated, two having lost 20 and 50 pounds, respectively, and 10 showed definite evidence of dehydration. Three

patients had goitres, 2 being definitely toxic. Three had pulmonary tuberculosis. Other complications included acute parotitis, measles, a streptococcal leg abscess, appendicitis and jaundice. Every possible method of treatment was used, including rest in bed for all cases, proctoclysis, hypodermoclysis, infusion, transfusion, purgation, alkalinization, gastric lavage, tube feeding, bromides, opiates, glandular extracts—one patient had 25 corpus luteum injections without result—and 5 therapeutic abortions, 3 by catheters, 1 by catheter and bag, and 1 by hysterotomy.

In 23 cases the vomiting was checked entirely in from 5 to 40 days, the average being from 12 to 15 days. Eight patients left the hospital against advice, improved but not cured; one of these had remained 35 days. Seven died, a mortality of 18.4 per cent, and an analysis of the deaths is interesting. The first patient had a positive Wasserman, pulmonary tuberculosis, and a streptococcal leg abscess, which had to be drained; she aborted spontaneously a month after admission, at 5 months, and died one hour later. The second had a toxic goiter, with a pulse never under 140; she died suddenly on the fifteenth day, when she was three and a half months pregnant; the vomiting had never been checked. The third case had a hysterotomy 2 months after admission, at 5 months; she died on the third day. Case four had an induced abortion after a month, at 4 months; she died in 3 days. Case five had an induced abortion after 2 weeks; she was 4 months pregnant, and died in 12 hours, before delivery. Case six was admitted practically moribund, and died in convulsions in 48 hours; she was about 4 months pregnant, and had pulmonary tuberculosis, as well as a marked anemia from malnutrition. Case seven had an induced abortion 3 weeks after admission; she developed parotitis and died in 12 days, being about 3 months pregnant.

A survey of these figures proves certain facts very definitely. The cases admitted early responded to treatment with a fair degree of promptness, but the longer treatment was delayed, the less hopeful was the prognosis. Every known therepeutic agent was employed, but no one method was uniformly successful, and the results in general were most discouraging. An analysis of the deaths, omitting those in which other complications were present, shows that if therapeutic abortion is to be of any value it must be performed early; otherwise it simply hastens the fatal issue. In justice to the staff it should be pointed out that in many instances the patients, because of religious convictions, rejected the proposal to empty the uterus, and the delay should be charged up to this fact, and not laid at the door of the service.

I admit that the records from a public institution are in no way comparable to those in a carefully supervised private practice, but every obstetrician at some time runs across neglected cases in his private work, or even carefully supervised cases which have gotten out of hand. At various times, therefore, in private work I have been called upon to meet these problems, and I have used every method of treatment, only to discard them all. I obtained particularly unsatisfactory results with the Paddock treatment by duodenal tube. I found that the difficulty of swallowing the tube increased the nervousness of patients already extremely excitable, and it was rarely retained long enough to get into the duodenum. I have carried possibly 15 cases along by the starvation method, hospital treatment, isolation in the charge of a competent nurse, complete starvation for 24 or 36 hours, the fluid balance being maintained by hypodermoclysis of normal saline solution, and procotoclysis, with a return to a graded milk and cereal diet, and then to solid food. I never permit a patient to go longer than three or four days with a pulse over 100 without advising termination of the pregnancy. This is one of the signs of increasing toxemia, and a thorough respect should be paid to it. This treatment, as I have said, has been fairly successful, but it is long and tedious, and I am never certain what the outcome will be.

Acting upon Dr. Luikart's suggestion, for the last year I have been using luminol of soda in all cases where the vomiting of pregnancy was not amenable to simple measures, and so far I have had unqualified success. To date I have used the treatment in 10 patients. Five were retaining possibly a third of the food ingested, but were losing strength and

weight. The other five were undoubtedly instances of pernicious vomiting, but whether toxic or neurotic I cannot say. All of the latter group had been under hospital treatment in other services and had had the routine measures of proctoclysis, hypodermoclysis, glucose infusions, starvation treatment and glandular therapy, with little or no result. One of them, at least, was quite as ill as any patient I ever saw under the same circumstances in a public service. The same treatment was employed with all. Two grains of luminol of soda was given one hour before each meal, with the same dose at bedtime, all by mouth except in 3 cases, where the first doses were given by hypodermic, and the patient was instructed to resume her ordinary diet. In one case, about three-quarters of the food taken during the first 24 hours was retained, after which there were no further attacks of vomiting; in every other case the relief was immediate. Within a week they had all gained weight and strength, their color was improved, and their outlook on life was very different. The number of doses was diminished after four or five days, and within three weeks the drug was discontinued entirely. In no instance has there been a recurrence of the trouble. At the present writing 5 of the patients have been delivered without difficulty of live babies, and the others are within one or two months of term.

The only untoward symptom following the administration of the drug was one case of urticaria, which was relieved by applications of soda paste. Several patients stated that they had had wild dreams, but none complained of restless nights due to drowsiness during the day, which Dr. Luikart mentioned as an objection in his report.

I can give no explanation for the success of luminol in the treatment of this condition except that it checks the pylorospasm, which I believe is largely responsible for the trouble. There may also be an indirect effect on the nervous system. I have not, of course, used it in a sufficiently large series of cases to make any statements of value concerning it, but certainly it has been the most satisfactory agent I have found as yet to combat this always annoying and frequently serious complication of pregnancy.

WHAT PRODUCES THE SHADOWS IN THE AORTIC AND HILAR REGIONS.*

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Because there existed a great diversity of opinion as to just what anatomical structures produced the shadows at the base of the heart and in the hilar regions, Drs. L. Delherm and Robert Chaperon undertook a painstaking and exhaustive anatomico-radiological study of the large vessels at the base of the heart and of the hilar structures, bronchi, pulmonary arteries and veins, with the hope of finding the correct answer to the following questions:

1. What produces the right border of the median shadow in normal subjects?
2. Where does the ascending aorta pass?
3. What produces the superior curve or the radiologic aortic arch?
4. What is the median curve, and what produces it?
5. What produces the hilar shadows?

In brief, their aim was to determine with precision the course of the aorta, the superior vena cava, the pulmonary artery and veins, the trachea and larger bronchi, and what relations these bear to each other on posterior-anterior views of the thorax.

Dr. Chaperon (1) made over 175 radiographs of 14 cadavers before and after injecting opaque material into the larger vessels, the trachea and the larger bronchi under fluoroscopic control. To avoid disturbing the thoracic organs and structures, the thoracic cavity was never opened, the opaque material being injected by way of the neck and abdomen. The youngest subject injected was 20 years old, and the oldest 83 years.

Aortic Shadow.

Up to this time the majority of the authors (2) stated that the right border of the median shadow was formed from below upwards by the right auricle, the superior vena cava, and the ascending aorta. And that the left border of the median shadow was formed from above downwards by the first portion of the

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descending aorta, the pulmonary artery and the left ventricle.

As a result of their studies on the cadaver, Delherm and Chaperon (3) furnish indubitable radiographic evidence that the right and left borders of the median shadow are formed as follows:

The right border is composed of four portions from above down:

1°. Passing obliquely across the sterno-clavicular angle, the shadow of the right innominate veins.

2°. Below is the external border of the superior vena cava, sometimes straight, but more often with a slight convexity outwards. It terminates in a slight notch. The point D.

3°. Below that oint, the shadow of the right auricle, with convexity to the right is seen. A well-defined notch marks its lower end at the point D'.

4°. Finally, below this point D' a shadow usually vertical, but sometimes directed obliquely outward, reaching to the diaphragm is seen. This shadow is formed by the interior vena cava.

The left border is composed of five portions:

1°. The upper end, which varies in size with the age of the subject and the position of the arch of the aorta, has a straight course and is formed by the sterno-vertebral shadow. Rarely it runs obliquely upward and outward and is then produced by the left subclavian artery.

2°. A curved shadow with convexity to the left, the aortic hemi-circle or terminal portion of the transverse arch of the aorta.

3°. The first portion of the descending aorta, usually vertical, sometimes slightly oblique downward and to the left; its length is variable, normally in adults 1 to 2 cm. It may reach 5 cm. in cases of senile aortitis.

4°. Below the Median Curve of the Authors is seen. Its course runs obliquely downward and to the left in a slight notch at the point G. Delherm and Chaperon believe that in normal subjects this shadow is produced entirely by the trunk of the pulmonary artery, but they are willing to admit that when the heart lies in an exaggerated horizontal position, the lower portion of the median curve may be produced by the shadow of the left auricle.

5°. Below the point G the left border of the median shadow is formed by the shadow of the left ventricle.

Contrary to the opinion generally held, the aortic shadow in none of their subjects, two of whom were 73 and 83 years old respectively, and had well marked senile aortitis, extended beyond the right border of the superior vena cava cava, and they were forced to conclude that heretofore the diameter of the whole or part of the superior vena cava has been included in the measurements of the transverse diameters of the arch of the aorta.

In one of their subjects the radiograph made before injecting the large vessels with the opaque solutions, showed a marked increase in the size of the shadow at the base of the heart, and the radiograph made after the large vessels had been injected under fluoroscopic control, showed that the aorta was only slightly enlarged, lying entirely behind the sternum, at some distance from the superior vena cava and in no wise responsible for the enlarged shadow noted above.

In a recent work, (4) to demonstrate the relationship of the heart and its valves to the anterior thoracic wall, Le Wald shows that the ascending aorta is situated behind and entirely hidden by the sternum, and that the right border of the upper portion of the median shadow is formed by the shadow of the superior vena cava.

Hilar Shadows.

De la Camp, Kraft, Arnsberger, Schellneberg, Juageas, Cottenot, etc., attribute the hilar shadows to the bronchial tree; Riedre, Albers-Schoenberg, Cohn, Barjon, Gauducheau, Bordet, Garcin believe that they are of vascular origin. Cowl, Groedel, Albert Weil attribute them in part to the vessels and in part to the bronchi. Finally, a large number of practitioners believe that they are of lymphatic origin.

As a result of their anatomo-radiological studies of the hilar shadows on cadavers injected under fluoroscopic control, Delherm and Chaperon conclude (5) that the normal hilar shadows and lung markings are produced almost entirely by the pulmonary arteries and their branches.

On good radiographs of living adults, these ramifications can be followed almost to the axillary zones of the lungs.

On the other hand in radiographs of cadavers of normal subjects when these arteries are empty and have not been filled with opaque material, the hilar shadows and lung markings are either absent or but slightly visible.

The larger bronchi produce clear band-like shadows nearly always visible either in the Posterio-anterior or Oblique positions. Their absence suggests that pathalogical changes have taken place in the bronchi or the peri-bronchial glands.

The pulmonary veins usually invisible in children and adults can be seen in radiographs of elderly subjects and in certain pathological conditions.

When normal, the tracheo-bronchial glands are not visible, but when enlarged as the result of inflammation or disease, they may modify the shape and dimensions of the hilar shadows to a considerable degree. Under those conditions, the pulmonary arteries are no longer clearly visible, but become partially or totally submerged in a more or less dense shadow in contact with the cardiac shadow and usually having a flou or hazy outline, and the clear band (bronchial shadow) normally seen between the shadows of the heart and the pulmonary arteries disappears.

The authors believe that a correct interpretation of the hilar shadows is not possible without a minute study of the course of the pulmonary arteries and their branches, of the larger bronchi, and especially of their relations to the median shadow.

They have no doubt that in many instances the ramifications of the pulmonary arteries when unusually well brought out, have been diagnosed as peri-bronchial infiltrations and fibrosis.

The writer had many opportunities both in his hospital and private work to verify these landmarks, and he believes with the authors that as they become more generally known and appreciated, the diagnosis of enlarged aorta and of peri-hilar and peri bronchial infiltration will become fewer.

The measurements on tele-radiographs of the vertical diameter of the aorta (the aortic hemi-circle) in the Post-Ant. view, and of the transverse diameter of the ascending aorta in the oblique view, remain the same as before but the transverse diameter of the aorta in the Post-Ant. view becomes much less than 4.5 cm. to 8 cm. varying with age of the subject, which is given by the majority of the authorities.

Just what this new measurement should be we are not prepared to state definitely at this time, but we are led to believe from measurements made on tele-radiographs of numerous subjects that 2.6 cm. at 20 years increasing with the age to 5 cm. at 70 is about right.

In our hospital service, we consider anything over 4 cm. in a subject 40 years or less, and anything over 5 cm. at 60 years, as pathological. These findings have been corroborated in a sufficiently large number of cases to convince us that the measurements given above are not very far from the correct ones.

REFERENCES.

1° Robert Chaperon. Etude anatome-radiologique des vaisseaux de la base du coeur pris de face; Travial du Laboratoire central d'Electro-Radiologie de la Pitie; Masson & Cie. Editeurs, Paris, 1921.

2° 1. Holmes, S. W. The use of the X-Ray in the examination of the Heart and Aorta; Boston Medical & Surg. J. 10, Oct. 1918.
2. Martin, Chas. Roentgen ray study of the great vessels; J. Am. Med. A. 15, Mar. 1920.
3. Dietlen; Die untersuchung von Herz, gefassen und Perikard (Leipsig, 1913).
4. Gocht, H. Handubuck der Rontgen-lehre. 5° edit. (Stutigart, 1918.)
5. Jaugeas; Precis de Radiodiagnostic. 2° edit. 1918.
6. Albert Weil; Elements de Radiologie 2° edit. 1920.
7. Cottenot; Radiologie et Radiumtherapie, 1921.
8. Vaquez et Bordet; Radiologie des vaisseaux de la base du coeur, 1920.
9. Barjon; Radiodiagnostic des affections pleuro-pulmonaires, 1916.

3° L. Delherm et R. Chaperon; Etude anatomo-radiologique de l'ombre mediane cardio-vasculaire vue de face; J. de Radiologie et d'Electrotherapie, Jan. 1923.

4° Leon T. Le Wald; The relation of the Heart, Pericardium and the Heart Valves to the anterior Chest Wall; Archives of Surg. Jan. 1923.

5° L. Delherm et R. Chaperon; Comment doit-on interpreter les ombres hilaires normales? J. de Radiologie et d'Electrologie, Jul. 1923.

DISCUSSION.

Dr. I. I. Lemann: So important a presentation should not go without comment. To those of us who have seen what were apparently large median shadows, a change of the interpretation means a recasting of our ideas and a re-studying of the things we have seen in the past, as were as a proper viewing of the cases we see in the future. I have been a warm defendant of the idea, for a good many years, that mediastinae abnormalities of of more frequent occurrence than most of us realie clinically. This piece of research, however, begins to shake my assurance and conviction,. and if what Dr. Granger has brought to our attention to-night is correct, I am sure we must have made diagnoses of aneurisms when these did not exist. I hope he will continue his work on the cadaver and particularly on patients who later may come to autopsy and obtain still further evidence

on the subject. I hope also he will continue work on the fluroscope and skiagraph in line with evidence he has to present to us tonight. There are so many patients in the Charity Hospital who later come to autopsy that I think he will find in New Orleans a great wealth of material.

I am also interested very much in the hilar shadows, and shall study them with new zeal and interest. I would like to ask Dr. Granger if it is true that there are more hiler shadows observed since our experience with the late war than before. If this be true, have we not been correct in attributing some of these shadows to the effects of "gassing" and of the great influenza emidemic?

(Dr. Granger) in closing said, in answer to Dr. Jones, that the measurements of the Aorta only apply to plates made with the patient in the upright position, and with a target-plate distance of 6 feet or more. According to Vasquez and Bordet, the transverse diameter of the arch of the Aorta under these conditions is from 4.5 cm. to 8 cm., varying with the age of the patient.

Basing his measurements on the new landmark for the shadow of the Aorta given by Drs. Delham and Chaperon, he found that the transverse diameter of the arch of the Aorta varies from 2.5 to 5 cm., according to the age of the patient. At 40 years he believes that 4 cm. is the maximum, and does not consider the Aorta enlarged unless its transverse diameter exceeds those dimensions.

He has studied carefully the median shadow in all the chest plates made at the Charity Hospital for the last six months, and in all of them the clear space which separates the Aortic shadow from the right border of the upper portion of the median shadow can be clearly seen, except in the cases of Aneurism, and he cannot help wondering why he did not make this observation before.

The work of Delham and Chaperon emphasizes the fact that a knowledge of the normal anatomo-radiological appearance of the various parts of the body is essential to make correct interpretations of radiographs. He shares Dr. Leman's opinion, that since the last war and the several flu epidemics enlarged hilar shadows are more frequently seen than before, but he is convinced that in many cases, intensified or slightly exaggerated hilar shadows and lung markings are incorrectly interpreted as peri-bronchial thickening and fibrosis, because it is not generally recognized that normally these shadows are produced by the pulmonary arteries and its sub-divisions, and that they vary considerably in subjects of different types and ages.

TREATMENT OF PURULENT ARTHRITIS.*

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NEW ORLEANS.

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I wish to briefly discuss a treatment for purulent arthritis which has revolutionized past ideas, and completely changed the prognosis in this class of cases. I refer to the Willems plan of treatment.

Five years have passed since Willems advocated the treatment of purulent arthritis "by wide arthrotomy followed by immediate active mobilization."

It is interesting to note that in his original contribution he states "no therapeutic law has been more firmly established than that which has made immobilization obligatory for every joint injury from the mild to the most severe."

We are all familiar with the old methods of treating joint suppuration. One has but to turn to the recent address by Professor Bastianelli (before the American College of Surgeons), in October, 1922 to find the following statement: "If we were asked what is the ultimate fate of an articular infection, almost everyone would answer that the result is the loss of function, if life and limbs are not destroyed."

He further states that "we must fight this opinion most strenuously, as the surgeon who believes this is like a general who believes that he will lose the battle."

"Let us say instead that the aim of treating lesions of the joints is to preserve function, and if certain rules are followed it is possible to do this in a great many mores instances than is believed generally."

Bastianelli credits the late John B. Murphy with having demonstrated that distention of synovial membranes by exudation must be promptly relieved. Doubtless all are familiar with the fact that Murphy advised puncture, aspiration and formaldehyde and glycerine injections. Thus we find recognition of the early efforts to outline a method to prevent ankylosis.

It is surprising how few contributions to the subject of acute suppuration of joint lesions have been made in the last few years. Many of these which have been written have not taken into account the epoch-making work of Willems.

One may read in recent works devoted to joint conditions such statements as the following: "Willems advises in addition to the opening in the capsule early active motion to accom-

*Read before the Orleans Parish Medical Society, January 28th, 1924.

plish drainage. Opinions differ as to the efficacy of this treatment. The Carrel-Dakin treatment has its advocates. Whatever method of drainage be adopted, care must be taken that it is thorough." (Ely.)

Ober advised against the abandonment of immobilization of septic knee joints.

One who has seen beneficial results from the use of the present method, which seems revolutionary, can agree in every word with the expression of Bastianelli. "It seemed impossible at the beginning of the war that purulent arthritis could be treated by small openings and by active mobilization, but now clinical experience has shown that mobilization according to Willems has stood the test of time."

The reason there has been so much skepticism about this latest development in joint surgery is a general lack of appreciation of the great ability of the synovial membrane to deal with infection.

Steward (in a recent issue of the *British Medical Journal*) claims that synovial membrane can deal with infection more efficiently than the peritoneum. Further, we sometime forget that absorption from synovial membranse is slow because of the absence of lymphatics within the joints. This slow absorption means distention of the capsule and a consequent loss of tonicity of the capsule; retention of infection within the joint results in destruction of the joint cartilages.

In order to avoid destruction early treatment must be instituted, and this following the old rule where there is pus it must be evacuated.

Referring once more to the work of Bastianelli, we find the statement "we are coming back to the old, venerable tradition, nature healing efforts."

Willems recognized that immobilization, and introduction of drainage tubes followed by frequent irrigation, meant only one result—ankylosis. Most of us can point to some such result in our experience.

All of us recall cases of acute suppuration within joints which has resulted in ankylosis, whether from punctured wounds or metastatic infection. They will also remember that ankylosis has followed even when drainage was established. We do not have to look back many years to recall the time when the master surgeons would incise and drain a joint and introduce several rubber tubes, after which a plaster cast would be applied. The prognosis for motion was always bad.

When Willems first suggested his plan many could hardly believe the truth which he stated.

At the Belgian congress in 1919 this new method was hailed as "the most valuable acquisition that the surgery of the war has given us."

1. The method consists in incision of the joint capsule as soon as pus is found to be present.

2. Drainage tubes are not used.

3. Immediate active mobilization is instituted.

4. Weight bearing is permitted as soon as the patient's temperature is less than 100.

The results are marvelous. I have patients with gonorrheal joints, and other acute purulent types, operated by this method who have perfect functioning joints now.

There are some details which it is well to observe when using the method:

1. Drainage. After incising the capsule there is a tendency for the synovial membrane to unite unless something is done to prevent closure. This is easily done by suturing the capsule to the skin margin on either side. This will make a gaping wound. No drainage tubes are used. No irrigating fluids should be used. Willems states: "I am of the opinion that irrigations are more harmful than useful."

Nature provides the best possible antiseptic in the form of an increased supply of synovial fluid.

Active mobilization of a joint increases the synovial fluid output. Mobilization of the joint diminishes pain; of this the patient must be assured. Pain results from distention of the capsule.

Movement approximates muscle planes thus forcing out fluid which may have "laked" in the inter-muscular planes. After the patient is convinced of this truth you will have little trouble with active motion. The character of the fluid changes rapidly from purulent to sero-purulent and then a clear serous fluid. It is surprising how quick these

joint wounds heal, and how stable the joints are.

This method is useful not only in the treatment of the purulent arthritis but also in the elective operation on joints. I have found it chiefly useful in arthrotomy, and arthroplasty where a closed joint which becomes distended is painful. If in these cases one leaves a small opening for the discharge of synovial fluid the patient is thereby made more comfortable and the surgeon feels a sense of security against infection.

By this method one can almost confidently predict that the patient will have a useful joint in a type of case previously considered hopeless for anything except an ankylosed joint.

DISCUSSION.

Dr. Urban Maes—I cannot refrain from discussing this very important subject. We cannot call attention too frequently to the brilliant results of the open treatment of suppurating joints. A review of the recent literature also points out the fact that other forms of synovitis may be benefitted by Willems treatment.

It was my good fortune in the World War to see many of these cases, and in the majority of instances, the knee, the largest joint in the body, was the one involved and is the joint which is specially adapted to Willem's treatment.

I would like to stress two points, (1) that passive motion will not do. Our early failures were due to the use of passive rather than active motion. (2) It is a question in my mind, whether we should suture the capsule to the skin. The reason for this modification of Willem's original suggestion is probably because we have placed our openings in bad positions, where free drainage could not take place. The gross anatomy of the knee joint must be considered and our openings placed in such a way that the various pockets can empty themselves. The action of the hamstring tendons must be taken into consideration. I have sometimes thought that direct infection from the sutured skin to the capsule might mix our infection by guiding in skin organisms into the joint in the intervals of rest, when drainage was not forcing secretions out, and in this way were prolonging convalescence.

The afrebrile patient should be encouraged to walk. This should be done when the temperature is under 100. In those patients where the endothelial lining of a joint has been distroyed and adhesions are bound to form, these will be stretched and still give a certain amount of function whereas adhesion with a fixation dressing means ankylosis.

Willems treatment may be briefly described as drainage plus active motion. The latter to be in the walking patient when the temperature is under 100.

Dr. Cohn—There is mightly little to add. Willem's method, it is agreed, is a good thing and the only point of discussion which has arisen between Dr. Maes and myself is whether we should put in a couple of cat gut sutures, or whether we should be afraid that by so doing infection would be introduced from without. It is not everybody who is able to make the incision so that it will remain open. Most of us had better stick to putting a couple of sutures in.

THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

An Historical Sketch.

MARY LOUISE MARSHALL,
NEW ORLEANS.

Assistant in Charge, Orleans Parish Medical Society Library.

On this, the eightieth birthday of the *New Orleans Medical and Surgical Journal,* it is with pardonable pleasure that we allow ourselves to review its romantic history, so indissolubly interwoven with the careers of our great physicians and the advance of medical science in the South.

When Drs. E. D. Fenner and Abner Hester issued the first number in May, 1844, there was not a single medical journal published in the Southern states, and only two in the middle West, at Cincinnati and Louisville. It was Dr. Fenner's enthusiastic belief, as expressed on various occasions, that Southern medical schools and Southern journals could best serve Southern doctors and help them in the solution of problems distinctively their own. In pursuit of this principle he was one of the founders and the first dean of the New Orleans School of Medicine in 1856. His biographer says: "He was a zealous laborer in medicine . . . the first to establish in this country the system of real clinical teaching. . . The fount of his heart was almost illimitable, and the great stream flowed silently, deeply, on through life to that ocean of eternal happiness not seen by human eyes, but which is at best the reward for labors well performed." Of Dr. Hester, Dr. Fenner says, at the time of his death in 1854: "It will be conceded by all who knew him that he was a physician of rare skill and judgment, of ample resources, bold and prompt in action and untiring in his attention to the sick. . . He was ever willing to consult with his honorable brethren when desired, but most of his patients were content to trust their lives to his skill and judgment. He was remarkable for his fine

personal appearance and the urbanity of his manners. . . We see in his life an illustration of the triumph of talent and perseverance over great obstacles! He came here a stranger oppressed with poverty; he died possessed of a handsome competence, beloved and regretted by a large circle of admiring friends."

Dr. Fenner's account of the beginning of the *Journal* is most interesting. He says:

"Happening to be thrown together in the city of New Orleans, and finding our fortunes alike desperate, a fellow-feeling gave rise to an intimacy between us which it is hoped will endure through life. Without money, with but few acquaintances and dependent on a precarious practice, which barely afforded the most economical support, we determined to project the hazardous adventure of a *Southern Medical Journal* and trust to the liberality of the medical profession for its support. The field was ample, rich and entirely unoccupied, but it was difficult to see how the experiment could succeed without having one cent of capital to start with. We actually had the prospectus

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DEVOTED TO

THE CULTIVATION OF MEDICINE,

AND THE

ASSOCIATE SCIENCES.

(*BI-MONTHLY.*)

ARRANGEMENT.

1.—Original Communications, Cases, and Surgical Operations occuring in Private Practice.
2.—Health of the City, with Reports from the New-Orleans Hospitals.
3.—Periscope of Practical Medicine—or Spirit of the Medical Journals, Foreign & Domestic.
4.—Brief Notices of Recent Medical Literature.

EDITED BY

ERASMUS D. FENNER, M. D.

AND

A. HESTER, M. D.,

One of the Physicians to the New-Orleans Charity Hospital.

"*Summum bonum Medicinæ Sanitas.*"
(GL.)

MAY 1844.

NEW ORLEANS,
PRINTED BY J. DOE.

printed on credit, one of our book-sellers being willing to go that far at all hazards, and we paid the bill—three dollars—out of the first spare money we had. The prospectus being out and distributed throughout the country we were fairly committed to bring out the work; but as yet, could find no person willing to undertake the publication. All we had to give was our own labor, which was cheerfully offered, but something more substantial was required. We appealed to the booksellers, to the proprietors of the City newspapers, and finally, to the Medical College, and leading physicians of the city for a guaranty of $500, but all to no purpose. The enterprise was conceived in poverty and finally poverty brought it forth! At this stage of our gestation, we had the good luck to meet with a poor French printer who had a handful of type and nothing to do. Him we persuaded by means of flattering promises to bring out the first number, and thus the *New Orleans Medical Journal* saw the light! Each number made out to pay its own way, but left no surplus on hand. In this manner we struggled through the first volume and were entering on the second with prospects somewhat improved when an unexpected rival appeared in the field. The Professors of the Louisiana Medical College issued a prospectus announcing the early appearance of a new medical journal from their school. A union was effected between the two and the late Prof. Harrison and Carpenter joined us in the publication of the *New Orleans Medical and Surgical Journal.* In 1848 we voluntarily withdrew from the Journal and in less than two years Drs. Carpenter and Harrison were removed by the hand of death, leaving the present worthy editor (Dr. Hester) alone in his glory."

The Journal was published regularly until the outbreak of the Civil War, when both its publication and the New Orleans School of Medicine were discontinued. At the close of the war, owing to reconstruction conditions, publication was not resumed, and in May, 1866, the first number of the *Southern Journal of Medical Sciences* was issued with Dr. Fenner as editor-in-chief. He says at this time editorilly:

"Impressed with a sense of the paramount duty of coming now to the work of humbly assisting in the rapid redemption of the minds of our people from the thralldom incident to a state of war, especially impressed with a sense of the duty we owe to Society in a proper cultivation of the most important of earthly pursuits, we present this undertaking to our professional brethern for their patronage and fostering care. Our time ,our labor, our money, all are expended in the enterprise, and all more for the benefit of every individual patron than they can possibly be for us. The editorial career is nothing new to us, and we know full well, in the incipiency of our enterprise all the difficulties to be encountered. One of us was a founder of the first medical journal that ever existed in New Orleans. The others have had ample experience in the conduct of the second. We would gladly have seen this work conducted by others, and we waited long after the cessation of the war, in the hope that a good journal would be issued from New Orleans. It has not been done, however, and we now buckle on the harness once more, determined to do our humble part towards the maintenance of a southern medical literature and opening wide the door for all our brethren to do likewise.

The importance of a periodical medical literature, no man can question. It is one of the striking and important features of the age in which we live, that besides our innumberable daily issues of newspapers, the now indispensable vehicle of general information throughout the civilized world, the progress of the arts and sciences is distinctly measured by the size of the current of periodical literature. These are the vehicle which carry to every man's door, at short intervals and at cheap rates all the useful information of the day. From these, the best of books are ultimately made; their circulation is comparatively limited and they transmit the mass of knowledge in a digested form to after ages....."

Nothing has more clearly given an impetus to medical progress in the South than the establishment of medical journals. Formerly there were but few medical writers in our country—Heustis, Cartwright, Boling and J. C. Nott standing almost alone. Since 1844 many and most able writers have appeared before the profession and our Southern medical journals have been quoted everywhere."

By unfortunate coincidence, Dr. Fenner died, following a short illness, on the very day the new journal made its appearance.

Contrary to expectations, the *New Orleans Medical and Surgical Journal* resumed publication in July, 1866, under the editorship of Drs. Warren Stone, James Jones, Stanford Chaille and W. C. Nichols. In November, 1867, a union was brought about between the editorial staff of the *Southern Journal of Medical Sciences* and that of the old journal, under the title *New Orleans Medical and Surgical Journal,* New Series, and regular publication has continued until the present time.

In 1922 the *Journal* was purchased by the Louisiana State Medical Society, and since July of that year has been directly controlled and published as the official organ of the Society.

The roster of editors of the *Journal* since its incipiency includes the names of many notable in the history of medicine who are no longer with us. Among these we may mention, in addition to its

founders, Drs. Fenner and Hester, Drs. William M. Carpenter, Warren Stone, James Jones, Samuel Bemiss, Josiah Nott, Samuel Logan, Stanford E. Chaille, John W. Mallett, T. G. Richardson, Joseph Holt, A. B. Miles, P. E. Archinard, A. McShane, A. W. de Roaldes and Isadore Dyer.

It has been the policy of the administration of *The New Orleans Medical and Surgical Journal*, from its earliest beginnings, to voice Southern medical thought and to serve at all times Southern medical interests. This is an ideal well worthy of sincere praise, and its field of service at the present time is in no sense diminished. Owned and administered by the Louisiana State Medical Society, its future is linked with that of the Society, and therefore is deserving of the whole-hearted support of every exponent of organized medicine.

New Orleans Medical
and
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A REVIEW OF THE HISTORY OF LOCAL ANESTHESIA.

In reviewing the subject of local anesthesia for our eightieth anniversary number it is to be noted that it had its beginning just half this number of years ago, when Karl Koller made his notable announcement of the discovery of cocain before the Opthalmological Congress at Heidelberg in 1884. It is also of interest to note that the entire field of anesthesia has been developed during the lifetime of our journal. Ether was still in its swadling clothes, having been introduced but two years previously by Crawford Long ,and chloroform had not yet made its debut into the surgical arena. And with Lister and Pasteur yet to illuminate the medical firmament it may be truly said that the life of this journal reaches back to primitive medical times when viewed from the standpoint of present-day medical knowledge.

The writer began his medical career during the experimental period of local anesthesia. The enthusiasm which followed Koller's revolutionizing announcement had already abated, the result of many fatalities following the rash and indiscriminate use of a dangerous drug. Following the lull there remained a few enterprising and courageous leaders gifted with prophetic vision who had not lost faith, who by their persistent efforts in the clinic and experimental laboratory laid the foundation and upon it built the structure of local anesthesia as we know it today. Schleich, Reclus, Halstead, Corning, Matas, Crile, Cushing, Barker, Braun and others comprised this noble band. We note with pride the Americans among them.

Schleich has been called the father of local anesthesia, and probably did more than any one man to popularize its use through his discovery that edematization of the tissues with extremely weak isotonic solutions (1 to 10,000) was sufficient for surgical anesthesia. As a consequence, the Schleich solutions soon became popular and were in use in all clinics.

The use of cold and construction in numbing the sensibilities had long been known, but it remained for J. Leonard Corning to intrdouce the constrictor and his ischaemic methods into local anesthesia where his name had already become well known by his many valuable suggestions. The same Corning was later to discover spinal anesthesia.

At this stage local anesthesia had reached a point where a greater degree of refinement of technic was to be looked for, and it was here that George Crile ond Rudolph Matas each contributed a rich and voluminous chapter. Dr. Matas conceived the idea and outlined and defined the use of the intra-neural, peri-neural and para-neural methods, and by these methods first amputated a thigh by blocking the sciatic, anterior crural and obturator nerves. He later worked out his intra-orbital injection of the foramen rotundum for resections of the upper jaw and the infra-malar route for reaching the third division of the fifth nerve at the foramen ovale.

About this time Dr. Matas was perfecting his infiltrating apparatus. This was probably the first of its kind, and had its beginning in a nursing bottle and later a pop bottle charged wth a bicycle pump, and finally developed into the perfected metal apparatus with pump attached, a relic of which is still to be seen on a shelf of the instrument room of Touro Infirmary. It was in this apparatus that the Braun solution of Eucain B was largely used, and for a time displaced the Schleich formulae.

Dr. Matas was also the first to call attention to and utilize the blocking of the three nerve trunks at the elbow, median, ulnar and musculo-spiral, for operations on the forearm and peripheral parts.

It is thus seen that the achievements and accomplishments of Prof. Matas fill a large chapter of local anesthesia, and its history cannot be written without their enumeration. While they may have been forgotten by some it is a pleasure for one who worked under him and was guided by him for so many years and who, among others, shared the contagion of his enthusiasm, to look back upon what seems but yesterday and record our labors.

It is of interest that nearly at the same time that Dr. Matas was amputating a thigh under local anesthesia, Prof. George Crile amputated an arm by blocking the brachial plexus and perfected many of the finer points in local anesthesia, giving us the term "nerve blocking," and later his anoci method.

It must be remembered that all of this early work and practically all of the fundamental principles upon which local anesthesia has been established were accomplished through the use of cocain and before the days of adrenalin. These men had to be constantly alert to the dangers of the drug they were using.

It may not be unitneresting to recount some of the practices resorted to in avoiding toxicity. Corning having discovered the value of ischemia and the use of the constrictor for this purpose, it was common practice to first render a limb ischemic and then apply a constrictor proximal to the field. After injecting the parts with the anesthetic solution, they were massaged to aid its diffusion; this was necessary in the absence of all circulation. In this way the duration of the anesthesia was limited only by the time it was safe to allow the constrictor to remain in position.

Corning also devised a set of rings to use on the head which later gave place to an ordinary piece of rubber tubing snugly drawn around the head above the ears.

It is seen from the above that the value of retarding the circulation to prevent absorption of the anesthetic and to intensify its local action was early recognized. These methods were not applicable to the trunk, and here ice was called into use. In the days before rubber bags, bladders filled with ice were often placed over the field after infiltration to chill the parts and still the circulation.

The introduction of adrenalin about 1900, the result of years of search by numerous investigators, and finally perfected by Takamine, marked the beginning of a new epoch and furnished a great stimulus to local anesthesia. This theurapeutic constrictor, well named by Braun the "chemical tourniquet," revolutionized the older methods. The introduction of novocain, that great achievement of the synthetic chemist's art, occurred about this time, and in combination with adrenalin rapidly displaced the cocain and eucain solutions from the general surgical ampitheatre.

Following the advent of the novocain adrenalin solutions other young and stalwart champions entered the arna and numerous converts flocked to their standards. Many of these enthusiastic deciples of local anesthesia had received their training at the hands of the great masters and were schooled in the use of the more dangerous cocain. Thus equipped, they were well prepared to "carry on" with the newer and safer novocain-adrenalin solutions and began the conquest of new territory by daily widening its scope and multiplying the applications of local anesthesia. In this country we are proud to acknowledge as foremost amongst them such men as Hertzler, Shelton, Babcock, Mitchell, Harris Bramsford Lewis, Gellhorn, Farr and Smith (dental surgery).

Abroad, the original workers and investigators were equally as numerous, and innovations and major undertakings of the first magnitude became the order of the day until as page after page

is unfolded, each illuminated with new material, it would seem that there is little left in major surgery that has not been done with local anesthesia.

The intra-spinal, para-vertebral, intra-sacral, para-sacral, intra-venous and intra-cranial injections (5th nerve) are a few of the more notable additions to our armamentarium.

In reviewing this work I cannot pass over the recent visit of our distinguished foreign guest, Prof. Finsterer, without pausing to note the part he has played in developing local anesthesia. Always an ardent advocate of these methods and a bold and original investigator, he has done much to popularize its use. Some years back he was quite active with para-vertebral methods for intra-abdominal operations with which he was quite successful. These methods, however, never appealed to the writer as sufficiently feasible or practicable for routine clinical use, and it was gratifying to note that Prof. Finisterer had dropped them for direct intra-abdominal injections, which method he recently demonstrated here with such brilliancy as to meet the approval of the most exacting critic.

The subject of spinal anesthesia has not yet been referred to, and has always been regarded by the writer as a separate and distinct field. It should not, however, be omitted even in this brief review, as it is distinctly an American discovery, for which we are indebted to Corning, already referred to, whose name appears so frequently and creditably in the earlier history of this subject.

Corning, who was an original and constructive thinker, conceived the idea of making injections of local anesthetics (at that time cocain) deep into the back around the spinal column, thinking that they might be carried by the circulation into the spinal cord and result in anesthesia. Just how the circulation was to do this he does not explain, but he thought it worth a trial and selected a dog for his first attempt. He finally succeeded and was able to completely paralyze sensation in the posterior half of the dog's body. Motion was but little affected, as the animal was able to walk about with unsteady, wobbly use of his hind quarters. Sensation was completely paralyzed as demonstrated by the application of forceps and cautery to the hind parts, to which the dog seemed to offer no objections, as his only response was a not uncontented wag of his tail. After several successful demonstrations on animals he applied it successfully on patients on whom he performed intra-urethral, rectal and other operations. The results of these investigations were published in the New York Medical Journal, October 31, 1885. It will be noted that this was just one year following the introduction of cocain. Corning at this time was not prominently known as a surgeon and had but little opportunity to give this method a wider application, and after creating a mild degree of interest among his American confreres, the incident was soon forgotten. Foreign investigators were, however, more alert and quickly realized its possibilities. Quincke, Bier and Tuffier develpoing the idea, soon perfected intra-spinal technic which for a time became popularly known as Bier's intra-spinal anesthesia.

Thus furnished with a foreign veneer and creditable recognition abroad, it soon found its way back into American clinics. To Prof. Matas is due the credit of having first used this method in America, as far as can be determined by any records. An unsuccessful attempt having been made on November 10, 1899, with eucain, resulting in only partial anesthesia. A suitable subject was again selected a few weeks later and with the assistance of Professors Felix Larue and H. B. Gessner, with myself as interne, a patient from Ward 1 (colored male surgical), Charity Hospital, was taken to the dressing room and an intra-spinal injection of cocain made which resulted in immediate and complete anesthesia of almost the entire body. A few days later, December 18, 1889, the same patient was operated on for hemmorrhoids at the regular surgical clinic with the same complete and thorough anesthesia. Following this, it was used extensively for a time by Prof. Matas and his staff. Prof. Chassaignac early adopted the method as a routine in his clinic, and with his assistant Dr. S. P. Delaup, used it almost daily. Dr. Delaup later succeeding Dr. Chassiagnac as professor of Genito Urinary Diseases in the New Orleans Polyclinic, continued in its use up to the time of his death,

when he had made many thousand injections, a record probably not equalled by anyone in this country. During the earlier days of spinal anesthesia Prof. Barker of London undertook an elaborate and extensive study of the subject and did much to elucidate many disputed poilnts regarding the movement and diffusion of the injected solution within the dural sac.

A brief mention should be made of a visit of Prof. Jonnesco of Bukharest to this country some years ago, following a tour of the principle clinics of Europe, in which he demonstrated his high spinal injections in the dorsal and even cervical region in an attempt to bring the entire body under the influence of spinal anesthesia. The method was extremely dangerous and resulted in many near accidents on the table. These injections were tried by a few following his visit, but were soon abandoned.

The growing importance of local anesthesia is now evidenced by the fact that it is in use in all large clinics in this country, even where it was formely looked upon with disfavor or of little consequence.

Its general use has so increased, and with it the inevitable mortality, that the American Medical Association has deemed it expedient for some years past to appoint a committee to study these fatalities. This committee, under the guidance and direction of Dr. Mayer of New York as chairman, has rendered distinguished and creditable service. Their last report, a complete and valuable document, has but recently been published with a tabulation of a long list of fatalities, which, as has been the experience in the past, have occurred in the specialties where strong solutions of cocain are in common use. The careful study of this report is recommended to all who make use of local anesthesia in ony way.

The disturbing feature of this report to the writer was the fact that in several cases in which ether has been used as an antidote it was apparently without effect in warding off the fatal termination. This is contrary to my experience in a fair number of cases. I am glad to say that only one occurred in my own practice. In the others I was called in by my confreres to assist, and all cases, five or six in number, recovered.

A typical case is as fololws: Mr. Y. had had several teeth extracted by a neighboring dentist. Anesthesia was difficult to establish, and repeated injections (amount and strength not obtainable) were made. Following the extrations he was quite faint and nauseated, and in a few minutes went into general convulsions. I was near by and was notified. I grabbed a bottle of ether and was there in a few minutes. During ing this delay two other convulsions had occurred, each harder and of longer duration than the preceding one. On arrival the patient was lying across a couch unconscious, pale, clammy, pulse rapid and feeble, respirations shallow and irregular. I lowered his head slightly below the level of his body and placing a cone over his mouth and nose, began to slowly administer ether. In a few minutes he began to have another convulsion, but by slightly quickening the flow of ether he soon relaxed, after which the ether was lessened to a very slow drop, and in a very little while it became evident that he was improving. The pulse became slower and of better volume and tone, the respirations were deeper and his color began to slowly return. After about fifteen or twenty minutes, the patient's general condition appearing much better, I suspended the ether. In a few minutes there was another convulsion which was again controlled with the ether, and following this it was slowly continued for about twenty minutes. The patient appearing nearly normal, though still unconscious, it was again suspended. In about five minutes there was slight evidence of a beginning convulsion which a few drops of ether controlled. The ether was then continued intermittently for about twenty minutes longer, making in all nearly an hour during which it had been administered. After a further wait of about fifteen minutes there was evidence of returning consciousness with pulse and respiration about normal. I remained with the patient in all about an hour and a half and left him semi-conscious. I instructed those with him to allow him to remain recumbent with head down for another hour and to administer the ether as they had seen me do on the first return of any trouble. I learned next day that he had gotton on without further disturbance, and aside from being a little weak

and nervous, was none the worse for his experience.

This and similar cases have convinced me of the value of ether as an antidote when administered slowly by the drop method just short of the stage of excitement.

In poisoning from local anesthetics we have in mild cases depression of the respiratory, circulatory and vaso-motor centers. In severe and lethal cases we have paralysis, respiration usually stopping first. In seeking an antidote we must either find one which neutralizes the poison in the centers (and we have no such agent) or one which stimulates these centers as long as they are capable of response and until the poison can be eliminated. In absolutely lethal cases where paralysis sets in early there is, of course, no hope from stimulants. A patient showing decided symptoms of poisoning from a local anesthetic is pale and clammy, respirations shallow and irregular, pulse rapid and weak ,and he is usually anxious and restless. If we now picture to ourselves a patient going under ether anesthesia just before the stage of excitement sets in, the face is flushed, respirations deep, with pulse full and bounding, just exactly the oppositepicture to the above. We may argue that in mild cases where the centers are only depressed but still capable of responding to the effects of ether, that these cases may have gotten well if left alone, and that in lethal cases where the centers are paralyzed, nothing does good, but this does not detract from the merits of ether in being a quick-acting, uniform stimulant of the rspiratory, circulatory and vaso-motor centers, and it is the only one I know which meets all these requirments, and until something better is found I feel it should be given further trial. This question could be further setlted by a few animal experiments, and I hope that the above-mentioned committee will institute such investigations. We have in digitalis, strychnine, caffeine, camphor, morphine, adrenalin, amyl nitrite, etc., drugs which meet the indications only partially or have other objectionable effects which makes them of but little avail in serious cases.

One point which has impressed the writer when in conversation with many surgeons otherwise well informed and skillful in the technical use of local anesthesia, is their lack of knowledge of the fundamental principles which underlie its use, and I feel that much good can be accomplished by disseminating a knowledge of these facts. All local anesthetics are universal protoplasmic poisons affecting all protoplasm alike by combining with it and forming a definite chemical combination resulting in its paralysis and this paralysis of the protoplasm of the sensory nerve tissue results in the anesthesia which we utilize surgically. To accomplish this combination the anesthetic must be kept in contact with the tissues at the point of injection for a sufficient length of time (a few minutes). It is broken up by the constant flow of blood through the part and is practically capable of maintaining anesthesia as long as the circulation can be controlled. When broken up it is not liberated in its original form, but is disintegrated into its constituent parts, some of which possess a similar though lessened degree of toxicity. This means that the anesthetic can act but once, and if exhausted locally, there can be no central or constitutional reaction. The protoplasm of any given area of tissue is capable of combining with and fixing a much larger quantity of the anesthetic than that which is needed to produce complete paralysis of all nerve tissue, motor as well as sensary, provided the circulation can be controlled.

This is the key to the situation and is the solution of the successful use of local without toxicity. This means that whenever toxic symptoms have occurred it is the result of an excess of the drug having been used above what was needed to completely saturate the tissues, or of it not having been held at the point of injection sufficiently long to accomplish fixation.

Much could be said about the formulae of solutions in accomplishing the above purpose by aiding their penetration into the tissue cells, but as this subject cannot be completely reviewed in the limited space allowed, reference is made to the now quite numerous and excellent textbooks on this subject.

Before closing, two drugs which exercise a synergestic action should be given brief mention. Adrenalin (the chemical tourniquet, Braun) accomplishes the purpose of contracting all small vessels

and thus arresting the circulation in the injected part and for general use should not exceed three or four drops to each ounce of local anesthetic solution. It is a toxic and dangerous drug if used too freely and may produce alarming symptoms which I have frequently seen and which may be misinterpreted as toxicity from the anesthetic. The patient's face is usually quite flushed, there is a painful sense of constriction about the heart with a throbbing, bursting headache. Amyl nitrite, or a few drops of chloroform, have usually worked well in relieving the condition. Morphine sulphate is a valuable synergistic drug when properly used, and from my observation I believe materially lessens toxicity. The anxious, nervous and apprehensive patient is more likely to develop toxic symptoms. One-quarter grain of morphine given hypodermically one hour beforehand relieves this nervous tention and makes the patient more apathetic and indifferent to his surroundings. Scopolamine gr. 1/150 as an adjunct to the morphine produces a further favorable effect.

Another effect of the morphine which has seemed to me quite probable in lessening toxicity, though difficult of demonstration, is that when once the centers are brought under its influence, they are less responsive to other drugs, and in this way it increases tolerance or resistance. Administered as an antidote after the toxic symptoms have occurred and the anesthetic has made its impression on the centers, it does not exercise the same efefct, and when used has been found of little value and at times has complicated the situation.

CARROLL W. ALLEN.

Dr. M. Feingold, presiding.

Dr. C. L. Eshleman: Case 1. I first saw this patient V. S. in May, 1911. She was 43 years ol dat that time and was complaining of nervousness, exophthalmos and enlarged tyroid, swelling of feet and legs.

Family History was negative.

Past Illness. Never sick before.

Present Illness: In 1903 she was called out of the theater and told that her husband had suddenly died. The shock was very great and she was nervous for a long time afterwards. She thinks this was the beginning of her trouble and shortly afterwards noticed tremor of her fingers when trying to thread a needle. Some months later she noted undue prominence of her eyes. After three years of nervousness and other symptoms she was finally advised that she had exophthalmic goiter. This about 1906.

From 1906 to 1911 she was treated by many physicians. This treatment consisted of X-ray application to the thyroid once or twice a week for two or three months. Also the use of Roger's serum then advocated. In addition many differtn drugs were used. During these five years she was confined to bed frequently for long intervals on account of weakness and a bad heart. Her lower extremities were dropsical. She was short of breath on slight exertion and had frequent attacks of palpitation. Her nervousness, tremor and exhaustion continued. She lost much weight.

On May 13, 1911, when first seen by me, her physical examination showed very noticeable exophthalmus. Nystagmus was marked, the eyeballs did not co-ordinate well, and the upper lid failed to readily follow the eye-ball downward while observing a moving object. The thyroid was only moderately, but symmetrically, enlarged, both lobes and the isthmus being involved. Her neck measured 12 3-8 inches; all the vessels in her neck pulsated visibly and a distinct thrill could be felt over the thyroid gland.

The precardial region was prominent and distinct, heaving was seen and felt. The heart was markedly enlarged both to the left and right, the apex being well outside of the left nipple line. The heart sounds were very irregular and a loud systolic murmur was heard widely over the anterior chest. P 2 was accentuated, pulse rate was 130 per minute; systolic blood pressure, 175.

Liver much enlarged and very tender from passive congesion: Legs edematous to hte knees. Urine showed a trace of albumin; otherwise negative. There was fine tremor to the fingers, marked nervousness and evidence of considerable loss of weight. She was a typical and severe case of Exophthalmic Goiter with dilated heart.

Treatment: She was put in bed and given large doses of Digitalis. Quinine Hydrobromate was being used extensively at this time and was given her in five-grain doses four times daily. Several months later quinine was discontinued and she was given four grains of chromium sulphate three times a day for about two months. No special improvement was noticed in her thyroid condition as the result of these medicines. Her heart improved under rest and Digitalis but was always badly damaged. In October, 1912, about a year and a half after she had first been seen by me, her nervousness had improved, th thyroid was distinctly smaller and tremor was less noticeable. About Christmas, 1912, she had an attack of cardiac dilation with blood streaked sputum and great dyspnoea, which confined her to bed for many weeks. In February, 1913, her heart wa sbetter and she was able to be up and about. The thyroid symptoms were subsiding. In July her only daughter died of typhoid. She stood the shock well and without any special nervous symptoms developing. In August, 1914, her condition was still improving. She was less nervous and gaining weight, but still had a badly damaged heart. In August, 1915, her condition was about the same. In May, 1915, she was shown at a clinical meeting here; 1915 to 1918 she was seen at long intervals chiefly on account of her heart symptoms; oedeme of legs was always present with dyspnoea on slight exertion. In January, 1918, the thyroid could be felt but would hardly be called enlarged, and it is doubtful whether she would have been considered a thyroid case if it were not for the striking exophthalmos which

still persisted. There was no tremor and no nervousness. She had gained 40 or 50 pounds in the preceding few years. From 1918 t othe present time she has complained only of her heart. At times she has been forced to take to bed for several weeks of rest. The last serious attack of heart weakness occurred in April, 1923, when her condition was so bad as to make me advise her to send for her son who was in Washington. However, under rest and Digitalis she improved again after a month or more in bed. In May, 1921, her Basal Metabolic rate was plus 35. In February, 1922, it was plus 44.2. This in spite of the complete subsidence of all the toxic manifestations of hyperthyroidism.

I present her because she is a very interesting case of Grave's Disease which has gradually subsided, not as a result of any particular treatment so far as I can see. Mild cases quite often have periods of improvement, but it is rare for a severe case of this type to show spontaneous recovery without operation. At the presen time she has none of the acute manifestations of hyperthyroidism; she merely shows the residual damage, chiefly to her heart. The exophthalmos also remains os it frequently does.

Dr. Maes: What did her kidneys test show?

Dr. Eshleman: Her urine has showed albumin at times, nothing else. It has been merely passive congestion of the ikdneys associated w ithcardiac disease. Her blood pressure has varied between 140 and 175. There hos been nothing to indicate a nephritis; all of the oedema has been that of a cardiac condition.

Dr. Guthrie: Dr. Eshleman mentioned several very interesting points. Digitalis in thyrotoxicosis is of very little value. Another phase of the case as it strikes me is the extreme dilation of the aortic arch. There is a horizontal pulsating behind the notch and a width about 11 cms. at the level of the first interspace, and I would suspect aneuysm.

A recent experience I have had in a limited number of cases in controlling tachycardia with quinidine sulphate is of interest. I have been able with this drug to add to the comfort of the patient by the slowing of the pulse. If we can relieve the heart of work by slowing the rate apreciably, we have done good work in these cases. If by administering harmless drugs we can accomplish this, it is worth while. I am not opening the question of jinidine in other heart conditions. Qiunidine s an somer of quinine which was isolated by Pasteur in 1854. There is much fear, and I believe unnecessary fear, connected with the use of quinidine. Personally, I do not feel there is any more risk in its use than quinine in the same dosage. There occurred a marked diminution in sweating, nervous symptoms and a decided slowing of the pulse in four cases in which we tried it.

Dr. Eshleman: As far as aneurysm is concerned, she has none of the classical signs of aneurism. On inspection, there is no lift to the sternum, no tracheal tug. While we might figure that th ewidening of the arch is too wide to be normal, X-ray plates and fluroscope have not shown it to be aneurism. Aneurisms are much more fusiform in shape and more prone to produce marked symptoms.

Dr. Maes: How lang ago treated with X-ray, and how much?

Dr. Eshleman: It was aprt of the treatment carried out some time between 1906 and 1911 before she came to me. She thinks it was in 1908. Once or twice a week for two or three months the thyroid was exposed ot the rays.

Dr. Maes: How long did she have edema?

Dr. Eshleman: She has had it from 1911 to the present time. When first seen in 1911 she was a violently toxic individual. Dr. Matas thought her too bad for an operation. At that time she had a humming, pulsating thyroid with a dilated heart and oedema. About 1913 her toxic symptoms began to subside and continued to subside until 1918. Since 1918 her hyperthyroidism has disappeared, and you will note that the gland can no longer be seen or felt. Her heart has been the only remaining feature in her case. She is now 56 years old, has oedema of legs, dyspnoea on exertion and a bad heart, but her thyroid intoxication has gradually subsided and is no longer an essential feature of the case.

Case No. 2. *Dr. Eshleman*: This patient, O. B. D., who is 57 years old, was referred to me by a laryngologist in November, 1923, on account of hoarseness of seven weeks' duration. You will note

that he has complete aphonia, being unable to rois his voice above a whisper. He has a paresis of the left recurrent laryngeal nerve. I was asked to examine his chest to determine, if possible, the cause of this condition.

Nearly all cases of *left* vocal cord paresis, not dut to local diseoses in the larynx itself, are caused by aneurism of the aortic arch. This is on account of the anatomy of the parts, the left recurrent laryngeal nerve passing down the left side of the neck, hooks around the aorta and passes back upward to the larynx. On the *right* side the recurrent nerve does not pass near the aortic arch, but hooks around the subclavian artery. A right vocal cord paresis is, therefore, rarely associated with aneurism. Without quoting definite statistics, I would say that probably from 90 to 95 per cent of the cases of left vocal cord paresis are due to aortic aneurism. I was, therefore, careful to look for an aneurism in this case.

History is as follows:

Family history and previous illnesses of no special importance. A few months ago, before his present illness, he noted general weakness and a slight tendency to dyspnoea on exertion. There was no cough.

Present Illness: Seven weeks before I first saw him, while drinking some orange juice, he noted that it "didn't seem to go down the right way," but no choking occurred. Thirty minutes later he stopped to talk to a friend on the street and noted that his voice was decidedly husky, in fact almost gone. No improvement took place and he consulted a physician who examined him and had his sputum examined with negative results. He was finally referred to a laryngologist, who found the left vocal cord flaccid and referred him to me for examination. His examination showed marked pulsation, heaving in character, lifting the left clavicle and second rib with each impulse. No tracheal tug, no diastolic shock, and no thrill was felt. On percussion dullness extended from the right sternal margin 4 inches to the left; in fact, the entire left infra-clavicular region above the third rib was dull. Posteriorly, dullness on the left extended downward to the level of the fifth dorsal vertebra. On auscultation the heart was negative and no bruit was heard. The breath sounds over the dull area were slightly diminished, there was no increase in the vocal fremitus; a few barely perceptible fine crackling rales could be heard. These rales were not any more than might be produced by slight compression of the lung by an aneurism. The blood pressure was equal in the two arms, systolic 160, diastolic 110. The radial vessels were sclerosed. His total and differential blood count was normal. Wassermann was negative. He had lost from 6 to 8 pounds during the preceding weeks.

I examined him several times before any X-ray examination was made, finally concluding that he had an aneurism of the arch projecting into the left chest, causing pressure on the left recurrent laryngeal. I think that with his history the vocal paresis, and the physical signs of dullness and pulsation in the regian mentioned, that this diagnosis would be correct 95 times out of 100. We then X-rayed him and found the condition shown in these plates which Dr. Samuel says is not an aneurism, but a growth in the upper lobe of the left lung. This is of course causing the pressure on the nerve trunk. At first I was not inclined to accept the X-ray diagnosis, but after observing another X-ray made fifteen days later, I am ready to accept the diagnosis. The nature of the growth is undetermined, but it is in all probability a carcinoma.

Treatment: Has consisted in one application of high voltage deep X-ray therapy. He also has taken 20 drops of K. I. three times daily. It is too soon yet to note any change in the condition. eHis interesting because ordinarily he should have had an aneurism. The pulsation seen must be transmitted to the growth by the aorta. I would like some of the internists here to come and confirm the fact that marked pulsation is present. Dr. Samuel will explain the X-ray to you. (X-ray pictures demonstrated.)

Dr. Simons: Any glands?

Dr. Eshleman: No glands are palpoble. Wassermann is negative. X-ray says it is not an aneurysm. We take it to be a glandular condition of unknown nature. He had had K. I. since.

Dr. Nelken: What is the pulsation you say is to be seen?

Dr. Eshleman: I can see it lift his up-

per chest, but do not know why the fluoroscope does not show it. It must be aortic pulsation transmitted to the tumor mass.

Dr. Bamberg: What about the breath sounds?

Dr. Eshleman: The breath sounds are not well detected over the mass. No increase in voice sounds. There are a few crackling rales to be heard which could easily be produced by slight compression of the lungs. He does not cough to any extent. On swallowing, the food does not always go down right, but he says he never chokes on food.

Dr. Maes: Any aneurismal bruit?

Dr. Eshleman: No. We practically pay no attention to bruit in diagnosis of aneurism. When I was a student the diagnosis used to depend on bruit. Now the heaving impulse and wide area of dullness combined with symptoms are the diagnostic points. Bruit is not present in 50 per cent of the cases.

Dr. Nelken: Any difference in pulses?

Dr. Eshleman: No, but when this sign is present it is a valuable sign of aneurism.

Dr. Gessner: Is it possible that this is an aneurism being cured by deposit of layers of clot?

Dr. Eshleman: Dr. Samuel says no. Clotting might explain the lack of pulsation under the fluoroscope, but he believes that there is a distinct disconnection between the shadow and the aorta. In the lateral view he says he can see that the shadow is not connected with the aorta. That is the chief reason why, he says, it is not aneurism.

Dr. Eshleman: There was no loss of weight since he first came under my observation on November 28th.

Dr. Keareny: Any improvement in his voice?

Dr. Eshleman: None since sudden aphonia took place about seven weeks before I saw him.

Dr. Eshleman: I believe the diagnosis of anuerism would be correct 99 times out of 100, but i nthis case I believe Dr. Samuel's belief is correct, and we are dealing with a malignant growth of the carcinomatous type. I do not think it is luetic. I d onot think it is any benign tumor of the lung such as fibroma, lipoma, dermoid cyst.

NEWS AND COMMENT

Medical activities of the past month have centered preparing for the State Medical Convention at Opelousas. There has been little of special interest reported, but the Convention activities should furnish much interesting news and comments for our next issue.

There is one division of the U. S. Veterans Bureau that the general public hears little or nothing about. It is taken for granted. This Division is the Mail Sub-Division.

It has been said that this Post Office, with the possible exception of the Central City Post Office, is the largest one in the City of Washington.

Medical Advice by Radio to Vessels at Sea.

While most large passenger vessels carry physicians, there are few ships other than such vessels that do. The Public Health Service is often called on for medical advice in the case of persons who are ill or injured on board vessels where there is no doctor.

Philadelphia Academy of Surgery.

The Samual D. Gross Prize, Fifteen Hundred Dollars. Essays will be received in competition for the prize until January 1st. 1925.

The coditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens".

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samual D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samual D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the"Trustees of the Samual D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1st, 1925.

The organization of a new division in the U. S. Veterans Bureau to handle all matters pertaining to guardianship has been authorized, it was announced today by General Frank T. Hines, Director of the Bureau.

The new division will function under the Control Service which is headed by Major Davis G. Arnold, Assistant Director.

Dr. Mary Griscom, a well known Philadelphia physician, who has spent the last nine months in relief work for the American Friends Service Committee in Austria, has just returned to America.

Dr. Griscom had charge of the anti-tuberculosis work for the Service Committee in accordance with a program supported by that organization and the Austrian Department of Health in a fight against the menacing plague which threatened the lives of tens of thousands of their children.

With the health of her child population sapped by years of undernourishment during the war, Austria was unable to check the invasion of tuberculosis. Very young children are infected with the disease and the government has not been able to provide treatment.

Dr. Griscom has been associated with Dr. von Pirquet, the famous child specialist in Vienna. Teachers are trained in anti-tuberculosis and child-care methods in Dr. von Pirquet's clinc, then are sent out into the remote districts of the provinces to give instruction in the homes and schools.

The Austrian government is fast regaining her ability to cope with her gigantic health problems, says Dr. Griscom. The Friends Service has been able to save the lives and health of hundreds of children by making it possible for them to have medical attention and suitable food.

The dangerous fallacy that the atmosphere in a closed garage is safe as long as an automobile engine continues to function has been disproved by a test conducted by engineers of the Interior

Department at the Pittsburgh Experiment Station of the Bureau of Mines.

Jackie Coogan will forsake the movies for ten weeks this summer in order to lead a modern "Children's Crusade" throughout the United States in an appeal to the children of America for a million-dollar shipload of foodstuffs for the destitute orphan children of the Near Est and then will sail in person to deliver the goods to the Near East orphans in Greece, Palestine and Syria, it became known here today when Charles V. Vickrey, general secretary of the Near East Relief, made public a letter from Mr. John H. (Jack) Coogan. Jackie's father, giving his consent to the trip.

U. S. Veterans' Bureau.

Dr. Edgar O. Crossman, manager of District No. 1, U. S. Veterans' Bureau, has been appointed Acting Medical Director, in charge of the Medical Division, according to an announcement made today by General Frank T. Hines, director of the bureau.

Dr. Crossman is a well known specialist on mental diseases, and General Hines expressed his satisfaction in being able to make a greater use of his medical skill in the new position.

REMOVALS.

Tarleton, Dr. T. T.—From Jeanerette to Grand Coteau, La.

Patterson, Dr. G. C.—From Vernon to Ruston, La.

PUBLICATIONS RECEIVED.

C. V. Mosby, St. Louis: *"Applied Pathology in Diseases of the Nose, Throat and Ear,"* by Joseph C. Beck, M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York: *"Radium Report of the Memorial Hospital, New, Second Series, 1923."*

Bailliere, Tindall and Cox, London: *"War Against Tropical Disease,"* by Andrew Balfour, C. B., C. M. G., M. D.

Medical Science Publishing Co., New York: *"Scientific Rejuvenation Without Operation,"* by H. H. Rubin, M. D.

J. B. Lippincott Company, *"International Clinics, Vol. 1, Thirty-fourth Series, March, 1924."*

Funk and Wagnalls Company, New York: *"Personal Hygiene: The Rules For Right Living,"* by Allan J. McLaughlin, M. D.; *Man and the Microbe: How Communicable Diseases Are Controlled,"* by C. E. A. Winslow, Dr. P. H.; *"Community Health: How To Obtain and Preserve It,"* by D. P. Armstrong, M. D.; *"The Baby's Health,"* by Richard A. Bolt, M. D.; *"Cancer: Nature, Diagnosis and Cure,"* by Francis C. Wood, M. D.

Washington Government Printing Office: *Public Health Reports, Vol. 39, Nos. 9, 10, 11, 12 and 13; United States Naval Medical Bulletin, March, 1924.*

Miscellaneous: *"A Comparison of Soap-Containing and Soapless Dentifices in their Effect on the Reaction of Saliva,"* by H. H. Bunzell, B. S., Ph. D.

REPRINTS.

"The Story of Insulin," by Dr. Edwin Slosson; *"Selling a Heritage for a Mess of Fertlizer,"* by Edwin Dakin; *"Is It Murder?"* by W. S. Gregory, D. D., St. Joseph, Mo.; *"Provision for the Care of Convalescents in New York City,"* by the Public Health Committee of the New York Academy of Medicine; *"The Gall-Bladder: Its Past, Present and Future,"* by J. E. Sweet, A. M., M. D., Sc. D.

BOOK REVIEWS.

The Tonsils, by Dr. Harry A. Barnes. Published by C. V. Mosby Co., St. Louis, Mo., 1923.

This second edition is a most creditable contribution on a subject ever ancient, ever new. We are now in a position to approach the question of focal infections with lessened over-enthusiasm and sounder judgment. This volume reflects such an attitude. All the details in the technic of the modern methods for the removal of tonsils are thoroughly described. It is an up-to-the-minute review of the all important tonsil problem.

HOMER DUPUY.

Manual of Proctology, by T .Chittenden Hill, Ph. B., M. D., F. R. C. S. Published by Lea & Febiger, Philadelphia and New York, 1923.

Though handicapped in his effort to be brief, Hill has a book which will be found to be very serviceable to those desiring to make a rapid survey of Proctology. All non-essential matter has been omitted. The author tells us in the Preface that he describes only those operations which he uses in his own work. The little volume is replete with useful information and is amply illustrated. Clearness and conciseness are noted throughout. The chapter on Radical Operation for Cancer of the Rectum was written and illustrated by W. Ernest Miles of London.

MAURICE LECALE.